



CTs 2-Channel Series

Operation Manual



CTs 600



CTs 1200



CTs 2000



CTs 3000

Obtaining Other Language Versions: To obtain information in another language about the use of this product, please contact your local Crown Distributor. If you need assistance locating your local distributor, please contact Crown at 574-294-8000.

This manual does not include all of the details of design, production, or variations of the equipment. Nor does it cover every possible situation which may arise during installation, operation or maintenance.

The information provided in this manual was deemed accurate as of the publication date. However, updates to this information may have occurred. To obtain the latest version of this manual, please visit the Crown website at www.crownaudio.com.

Trademark Notice: Com-Tech, Crown, Amcron and Multi-Mode are registered trademarks of Crown International. PIP and PIP2 are trademarks of Crown International. Other trademarks are the property of their respective owners.

Some models may be exported under the name Amcron.®

Important Safety Instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with a dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with a cart, stand, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 15) To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



TO PREVENT ELECTRIC SHOCK DO NOT REMOVE TOP OR BOTTOM COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



À PRÉVENIR LE CHOC ÉLECTRIQUE N'ENLEVEZ PAS LES COUVERCLES. IL N'Y A PAS DES PARTIES SERVICEABLE À L'INTÉRIEUR. TOUS REPARATIONS DOIT ÊTRE FAIRE PAR PERSONNEL QUALIFIÉ SEULEMENT.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

AVIS
RISQUE DE CHOC ÉLECTRIQUE
N'OUVREZ PAS

IMPORTANT

CTs Series amplifiers require Class 2 output wiring.



MAGNETIC FIELD

CAUTION! Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below the unit. Because this amplifier has a high power density, it has a strong magnetic field which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit.



If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the preamplifier or other sensitive equipment at the top.

WATCH FOR THESE SYMBOLS:

The lightning bolt triangle is used to alert the user to the risk of electric shock.



The exclamation point triangle is used to alert the user to important operating or maintenance instructions.



FCC COMPLIANCE NOTICE

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Crown International, Inc.

DECLARATION of CONFORMITY

ISSUED BY: Crown International, Inc.
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Cardiff
CF23 8ND United Kingdom

Equipment Type: Commercial Audio Power Amplifiers

Family Name: CTs

Model Names: CTs 3000, CTs 2000, CTs 1200, CTs 600

EMC Standards:

EN 55103-1:1995 Electromagnetic Compatibility - Product Family Standard for Audio, Video, Audio-Visual and Entertainment Lighting Control Apparatus for Professional Use, Part 1: Emissions

EN 55103-1:1995 Magnetic Field Emissions-Annex A @ 10 cm and 1 M

EN 61000-3-2:1995+A14:2000 Limits for Harmonic Current Emissions (equipment input current $\leq 16A$ per phase)

EN 61000-3-3:1995 Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems Rated Current $\leq 16A$

EN 55022:1992 + A1: 1995 & A2:1997 Limits and Methods of Measurement of Radio Disturbance Characteristics of ITE: Radiated, Class B Limits; Conducted, Class B

EN 55103-2:1996 Electromagnetic Compatibility - Product Family Standard for Audio, Video, Audio-Visual and Entertainment Lighting Control Apparatus for Professional Use, Part 2: Immunity

EN 61000-4-2:1995 Electrostatic Discharge Immunity (Environment E2-Criteria B, 4k V Contact, 8k V Air Discharge)

EN 61000-4-3:1996 Radiated, Radio-Frequency, Electromagnetic Immunity (Environment E2, criteria A)

EN 61000-4-4:1995 Electrical Fast Transient/Burst Immunity (Criteria B)

EN 61000-4-5:1995 Surge Immunity (Criteria B)

EN 61000-4-6:1996 Immunity to Conducted Disturbances Induced by Radio-Frequency Fields (Criteria A)

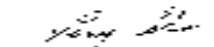
EN 61000-4-11:1994 Voltage Dips, Short Interruptions and Voltage Variation

Safety Standard:

EN 60065: 1998 Safety Requirements - Audio Video and Similar Electronic Apparatus

I certify that the product identified above conforms to the requirements of the EMC Council Directive 89/336/EEC as amended by 92/31/EEC, and the Low Voltage Directive 73/23/EES as amended by 93/68/EEC.

Signed



Larry Coburn

Title: Senior Vice President of Manufacturing

Date of Issue: March 1, 2002

Table of Contents

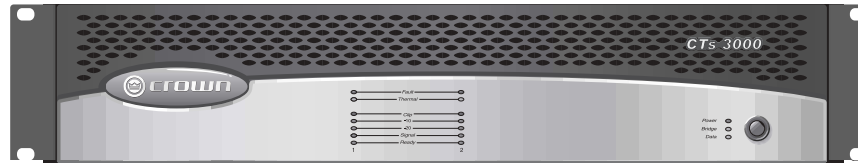
Important Safety Instructions	2	5.1.3 Fault	15
Declaration of Conformity	3	5.1.4 High-Pass Filters	15
1 Welcome	5	5.1.5 Low-Pass Filters	15
1.1 Features	5	5.1.6 AC Under/Over Voltage Protection	15
2 How to Use This Manual	6	5.1.7 Circuit Breaker	15
3 Setup	7	5.1.8 DC Output Servo	15
3.1 Unpack Your Amplifier	7	5.1.9 Inrush Limiting	15
3.2 Install Your Amplifier	7	5.1.10 Variable-speed Fans	15
3.3 Ensure Proper Cooling	7	5.2 Advanced Features	15
3.4 Choose Input Wire and Connectors	8	5.2.1 Switching Power Supply	15
3.5 Choose Output Wire and Connectors	8	5.2.2 Input Compressor	15
3.6 Wire Your System	9	5.2.3 Sleep Circuit	15
3.6.1 Dual 8/4/2 Mode	9	5.2.4 Input Sensitivity Switches	16
3.6.2 Bridge-Mono 16/8/4 Mode	9	5.3 Options	16
3.6.3 Dual 70V/100V Mode	10	5.3.1 Nominal Attenuation Settings	17
3.6.4 Bridge-Mono 140V/200V Mode	10	6 Troubleshooting	18
3.6.5 Dual Mode with "Y" Input	11	7 Specifications	20
3.7 Connect to AC Mains	12	8 Service	24
3.8 Startup Procedure	12	8.1 Worldwide Service	24
4 Operation	12	8.2 US and Canada Service	24
4.1 Precautions	12	8.2.1 Service at a US or Canada Service Center	24
4.2 Front Panel Controls and Indicators	13	8.2.2 Factory Service	24
4.3 Back Panel Controls and Connectors	14	8.2.3 Factory Service Shipping Instructions	24
5 Advanced Features and Options	15	8.2.4 Crown's Profit Protection Plan	24
5.1 Protection Systems	15	9 Warranty	25
5.1.1 Thermal Level Control (TLC)	15	Crown Factory Service Information Form	27
5.1.2 Junction Temperature Simulation (JTS)	15		

CTs 600		* 20 Hz–20 kHz Power
2-ohm Dual (per ch.)	150W	
4-ohm Dual (per ch.)	300W	
8-ohm Dual (per ch.)	300W	
16-ohm Dual (per ch.)	300W	
70V Dual (per ch.)	300W	
4-ohm Bridge	300W	
8-ohm Bridge	600W	
16-ohm Bridge	600W	
140V Bridge	600W	

*20 Hz–20 kHz Power: refers to maximum average power in watts from 20 Hz to 20 kHz with 0.1% THD.

CTs 1200		* 20 Hz–20 kHz Power
2-ohm Dual (per ch.)	250W	
4-ohm Dual (per ch.)	600W	
8-ohm Dual (per ch.)	600W	
16-ohm Dual (per ch.)	300W	
70V Dual (per ch.)	600W	
4-ohm Bridge	500W	
8-ohm Bridge	1200W	
16-ohm Bridge	1200W	
140V Bridge	1200W	

*20 Hz–20 kHz Power: refers to maximum average power in watts from 20 Hz to 20 kHz with 0.1% THD.



1 Welcome

Building on the foundation of the *Com-Tech*® Series, the Crown® *CTs* Series offers new flexibility and value for installed sound. The Com-Tech Series was the first to offer independent selection of high- and low-impedance operation for a specific channel, and *CTs* Series amplifiers continue that tradition, with power levels and features carefully chosen to perfectly integrate into fixed install design requirements.

Modern power amplifiers are sophisticated pieces of engineering capable of producing extremely high power levels. They must be treated with respect and correctly installed if they are to provide the many years of reliable service for which they were designed.

In addition, *CTs* Series amplifiers include a number of features which require some explanation before they can be used to their maximum advantage.

Please take the time to study this manual so that you can obtain the best possible service from your amplifier.

1.1 Features

- Switching Power Supply for reduced weight.
- High power-density, with all two-channel models in a 2U chassis.

- Direct constant-voltage (70V/100V/140V/200V) or low-impedance (2/4/8 ohm) operation. No switch required.
- Input sensitivity is independently selectable for each channel. Choose low-impedance (4/8 ohm), constant-voltage (70V/100V/140V/200V), or 26 dB.
- TLC protection circuitry protects the amplifier from long-term excessive heat by subtly and dynamically reducing the gain only when necessary.
- JTS circuitry (CTs 600/1200 only) quickly protects BJT output transistors from unsafe operating conditions without shutting the channel down. (Not applicable to BCA amplifiers as they are inherently protected.)
- *PIP2*™ (Programmable Input Processor) connector accepts accessory modules that tailor the amplifier to suit specific applications.
- Removable terminal block input connectors, with “Y” Input Switch in the standard PIP2-BBY module.

(Continued on next page)

CTs 2000		* 20 Hz–20 kHz Power
2-ohm Dual (per ch.)	1000W	
4-ohm Dual (per ch.)	1000W	
8-ohm Dual (per ch.)	1000W	
16-ohm Dual (per ch.)	625W	
70V Dual (per ch.)	1000W	
100V Dual (per ch.)	1000W	
4-ohm Bridge	2000W	
8-ohm Bridge	2000W	
16-ohm Bridge	2000W	
140V Bridge	2000W	
200V Bridge	2000W	

*20 Hz–20 kHz Power: refers to maximum average power in watts from 20 Hz to 20 kHz with 0.35% THD.

CTs 3000		* 20 Hz–20 kHz Power
2-ohm Dual (per ch.)	1500W	
4-ohm Dual (per ch.)	1500W	
8-ohm Dual (per ch.)	1250W	
16-ohm Dual (per ch.)	625W	
70V Dual (per ch.)	1500W	
100V Dual (per ch.)	1500W	
4-ohm Bridge	3000W	
8-ohm Bridge	3000W	
16-ohm Bridge	2500W	
100V Bridge	3000W	
200V Bridge	3000W	

*20 Hz–20 kHz Power: refers to maximum average power in watts from 20 Hz to 20 kHz with 0.35% THD.

1 Welcome

Features (continued from page 4)

- Switchable high-pass filter for each channel provides low-frequency roll off to eliminate step down transformer saturation when used in distributed systems.
 - Comprehensive array of indicators including Power, Data, and Bridge; along with Ready, Signal, Clip, Thermal and Fault for each channel, provide accurate diagnostics.
 - Blue Power Indicator flashes if the amplifier shuts off due to an under/over-voltage condition on the AC mains.
 - Advanced protection circuitry guards against: shorted outputs, DC, mismatched loads, general overheating, under-/over-voltage, high-frequency overloads and internal faults.
- Legendary Crown class I (BCA) and class AB+B (*Multi-Mode*[®]) output topologies offer the best in amplifier reliability. CTs 600/1200 use Class AB+B; CTs 2000/3000 use Class I.
 - Class I is the lowest distortion, lowest noise, and highest performing topology available among switch-mode amplifiers.
 - Continuously-variable fans optimize cooling efficiency.
 - Three Year, No-Fault, Fully-Transferable Warranty completely protects your investment and guarantees its specifications.
 - Crown's Profit Protection Plan guarantees replacement of covered amps should they fail at any time during the original three-year warranty period (available in U.S. only).

2 How to Use This Manual

This manual provides you with the necessary information to safely and correctly setup and operate your amplifier. It does not cover every aspect of installation, setup or operation that might occur under every condition. For additional information, please consult Crown's *Amplifier Application Guide* (available online at www.crownaudio.com), Crown Tech Support, your system installer or retailer.

We strongly recommend you read all instructions, warnings and cautions contained in this manual. Also, for your protection, please send in your warranty registration card today. And save your bill of sale—it's your official proof of purchase.

3 Setup

3.1 Unpack Your Amplifier

Please unpack and inspect your amplifier for any damage that may have occurred during transit. If damage is found, notify the transportation company immediately. Only you can initiate a claim for shipping damage. Crown will be happy to help as needed. Save the shipping carton as evidence of damage for the shipper's inspection.

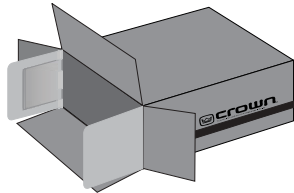
We also recommend that you save all packing materials so you will have them if you ever need to transport the unit. **Never ship the unit without the factory pack.**

YOU WILL NEED (not supplied):

- Input wiring cables
- Output wiring cables

Rack for mounting amplifier (or a stable surface for stacking)

WARNING: Before you start to set up your amplifier, make sure you read and observe the Important Safety Instructions found at the beginning of this manual.



3.2 Install Your Amplifier

CAUTION: Before you begin, make sure your amplifier is disconnected from the power source, with power switch in the "off" position and all level controls turned completely down (counterclockwise).

Use a standard 19-inch (48.3 cm) equipment rack. See Figure 3.1 for amplifier dimensions.

You may also stack amps without using a cabinet.

NOTE: When transporting, amplifiers should be supported at both front and back.

3.3 Ensure Proper Cooling

When using an equipment rack, mount units directly on top of each other. Close any open spaces in rack with blank panels. DO NOT block front or rear air vents. The side walls of the rack should be a minimum of two inches (5.1 cm) away from the amplifier sides, and the back of the rack should be a minimum of four inches (10.2 cm) from the amplifier back panel.

Figure 3.2 illustrates standard amplifier airflow.

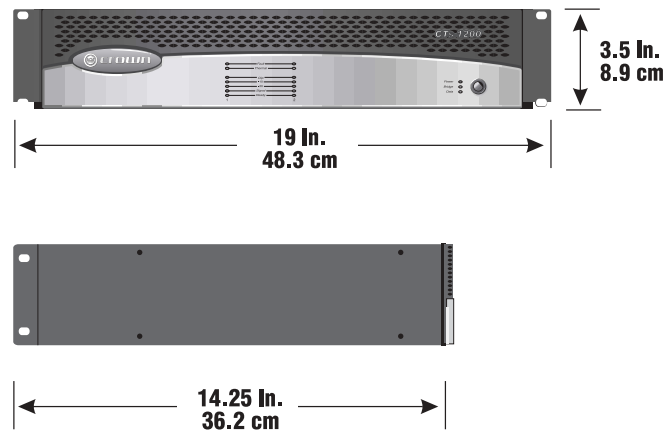


Figure 3.1 CTS 2-Channel Series Dimensions

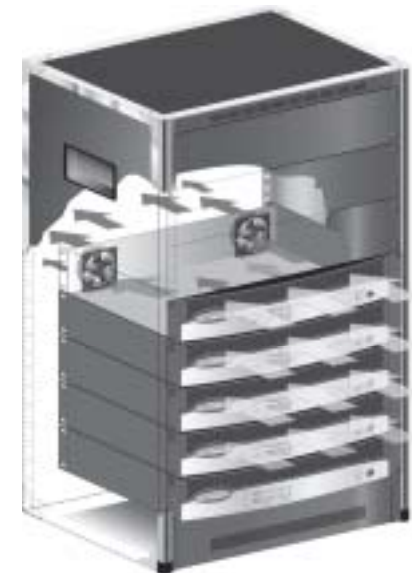


Figure 3.2 Airflow

3 Setup

3.4 Choose Input Wire and Connectors

Figure 3.3 shows connector pin assignments for balanced wiring, and Figure 3.4 shows connector pin assignments for unbalanced wiring.



NOTE: Custom wiring should only be performed by qualified personnel.

3.5 Choose Output Wire and Connectors

A protective cover is installed over the barrier-strip output. Some models have a cover with two holes. To remove this type of cover:

1. Loosen screws inside top and bottom holes of cover (see Figure 3.6).
2. Slide cover to left or right, then pull it off away from the amplifier.

Crown recommends using professionally constructed, high-quality, two- or four-conductor, heavy gauge speaker wire and connectors. You may use terminal forks up to 10 AWG or bare wire for your output connectors (see Figure 3.5). To prevent the possibility of short-circuits, wrap or otherwise insulate exposed loudspeaker cable connectors. For best results, Crown recommends Panduit part #PV10-10LF-L or equivalent terminal fork. Screw spacing is shown in Figure 3.5.

Using the guidelines below, select the appropriate size of wire based on the distance from amplifier to speaker (low-impedance loads only).

Distance	Wire Size
up to 25 ft. (7.6m)	16 AWG
26-40 ft. (7.9-12.2m)	14 AWG
41-60 ft. (12.5-18.3m)	12 AWG
> 60 ft. (18.3m)	10 AWG



CAUTION: Never use shielded cable for output wiring.



Replace output cover after output wiring is complete.

BALANCED LINE

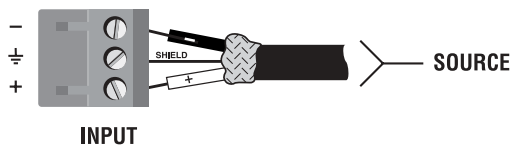


Figure 3.3
Balanced Input Connector Wiring

UNBALANCED LINE

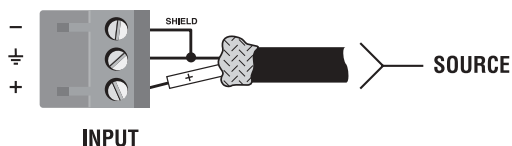


Figure 3.4
Unbalanced Input Connector Wiring

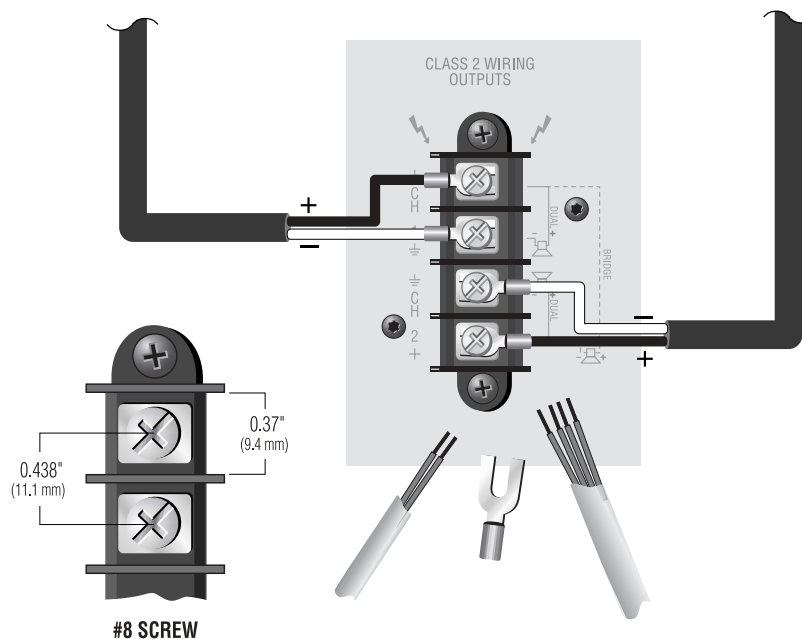


Figure 3.5 Typical Output Connector Wiring

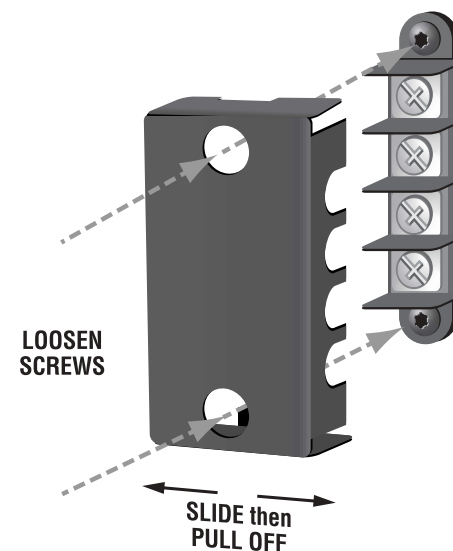


Figure 3.6 How to Remove the Two-Holed Barrier-Block Cover

3 Setup

3.6 Wire Your System

3.6.1 Dual 8/4/2 Mode

Typical input and output wiring, along with Attenuator and Mode Switch settings are shown in Figures 3.6 and 3.7. Make sure the Mode switch is set to the "Dual" position when operating in Dual mode.

INPUTS: Connect input wiring for each channel. The Y switch on the rear PIP panel can be used to parallel the channel inputs when only mono input signals are necessary. The amplifier's channel outputs are still independent.

OUTPUTS: Maintain proper polarity (+/-) on output connectors.

Connect the Channel 1 speaker's positive (+) lead to amplifier Channel 1 positive terminal; repeat for negative (-). Repeat Channel-2 wiring as for Channel 1. Refer to Section 3.5 for output connector pin assignments.

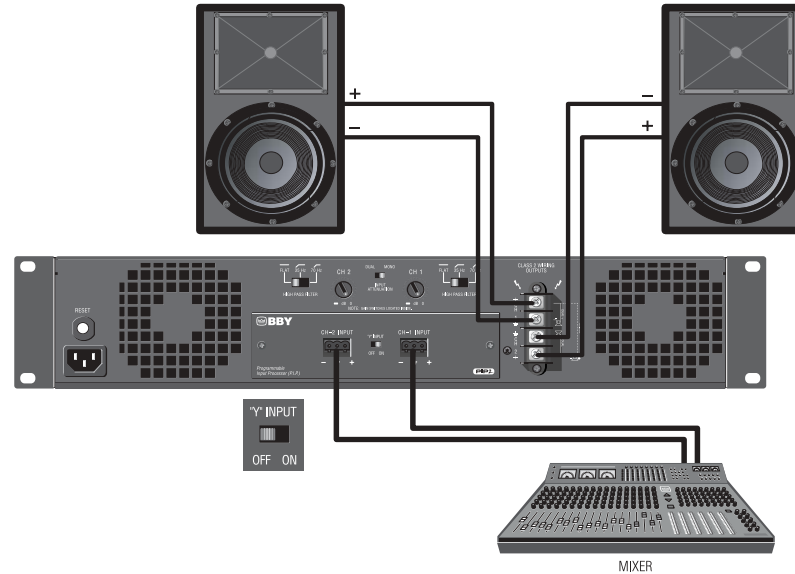


Figure 3.7 System Wiring, Dual Mode.

3.6.2 Bridge-Mono 16/8/4 Mode

Typical input and output wiring, along with Attenuator and Mode Switch settings, are shown in Figures 3.8 and 3.9. Make sure the Mode switch is set to the "Mono" position when operating in Bridge-Mono mode.

INPUTS: Connect input wiring to Channel 1 only.

OUTPUTS: Connect the speaker across the positive terminals of each channel pair. Do not use the negative terminals of the channel pair when the pair is being operated in Bridge-Mono mode. Refer to Section 3.5 for output connector pin assignments.

NOTE: Crown provides a reference of wiring pin assignments for commonly used connector types in the *Crown Amplifier Application Guide* available at www.crownaudio.com.

NOTE: When operating in Bridge-Mono mode, turn down (full CCW) the Input Attenuator for Channel 2. The Channel-1 Input Attenuator works both channels.

See the next page for constant-voltage operation.

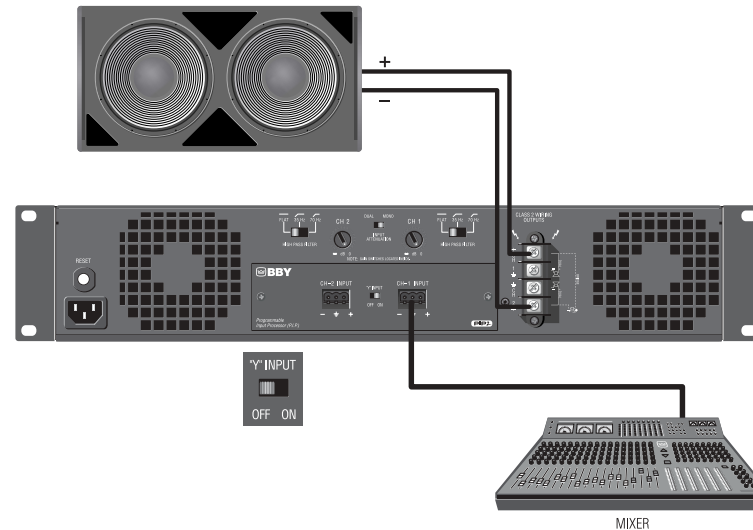


Figure 3.9 System Wiring, Bridge-Mono Mode

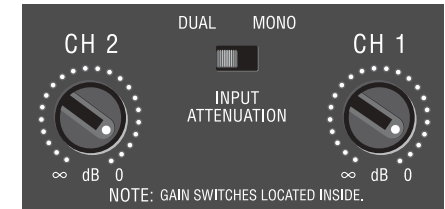


Figure 3.8 Attenuator and Mode-Switch Settings for Dual Mode

Always route the input and output wires in separate bundles.

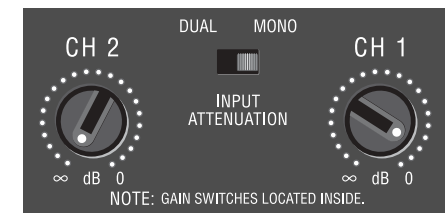


Figure 3.10 Attenuator and Mode-Switch Settings for Bridge-Mono Mode

3 Setup

3.6.3 Dual 70V/100V Mode

Typical input and output wiring, along with Attenuator and Mode Switch settings are shown in Figures 3.10 and 3.11. Make sure the Mode switch is set to the "Dual" position when operating in Dual mode.

INPUTS: Connect input wiring to both channels.

OUTPUTS: In Dual Mode, the CTs 600/1200 can power 25/50/70V lines; the CTs 2000/3000 can power 25/50/70/100V lines. Connect each channel of output connectors to speakers that have the appropriate transformers.

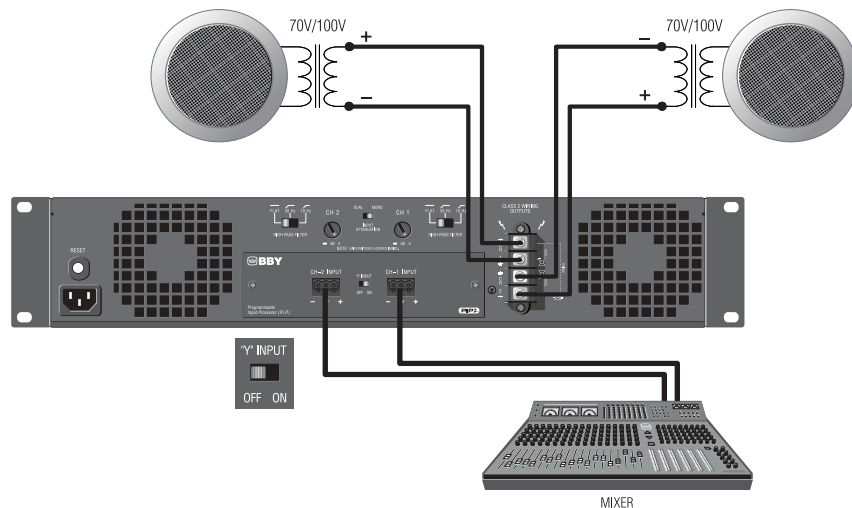


Figure 3.11 System Wiring and Y-Switch Setting for 70V/100V Operation

3.6.4 Bridge-Mono 140V/200V Mode

Typical input and output wiring, along with Attenuator and Mode Switch settings are shown in Figures 3.12 and 3.13. Make sure the Mode switch is set to the "Mono" position when operating in Bridge-Mono mode.

INPUTS: Connect input wiring to Channel 1 only.

OUTPUTS: In Bridge-Mono mode, the CTs 600/1200 can power 140V lines; the CTs 2000/3000 can power 140V and 200V lines. Connect speakers with 140V or 200V transformers across the positive terminals of the channel pair. Do not use the negative terminals of the channel pair when the pair is being operated in Bridge-Mono mode. Refer to Section 3.5 for output connector pin assignments.

NOTE: When operating in Bridge-Mono mode, turn down (full CCW) the Input Attenuator for Channel 2. The Channel-1 Input Attenuator works both channels.

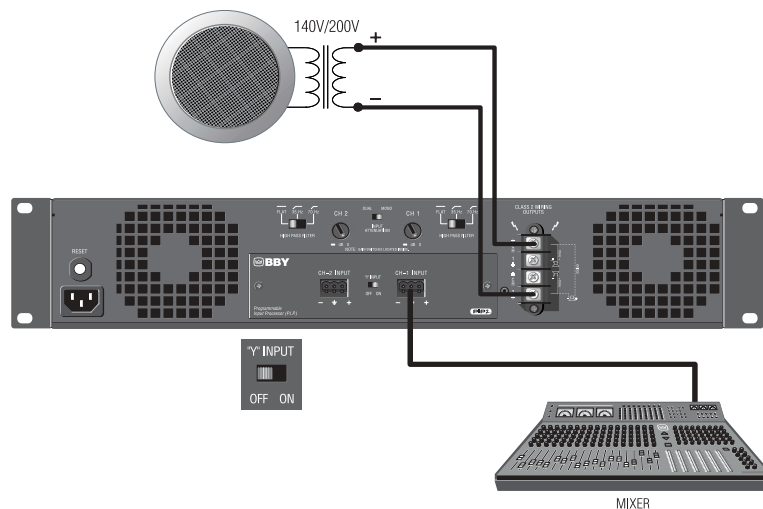


Figure 3.13 System Wiring and Y-Switch Setting for 140V/200V Operation

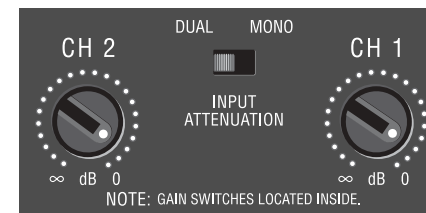


Figure 3.12 Attenuator and Mode-Switch Settings for 70V/100V Operation

Always route the input and output wires in separate bundles.

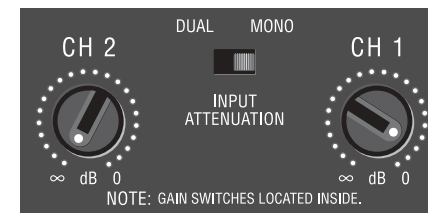


Figure 3.14 Attenuator and Mode-Switch Settings for 140V/200V Operation

3 Setup

3.6.5 Dual Mode with “Y” Input

See Figure 3.14. This configuration feeds a mono signal to both Channel 1 and Channel 2. In the example in Figure 3.14, Channel 1 is driving a low-impedance loudspeaker and Channel 2 is driving a loudspeaker with a 70V transformer.

INPUTS:

Connect the signal to the Channel 1 input. On the back panel, set the “Y” Input Switch to ON.

OUTPUTS:

Connect the Channel 1 speaker’s positive (+) lead to Channel 1 positive terminal of amp; repeat for negative (–).

Connect the Channel 2 speaker’s positive (+) lead to Channel 2 positive terminal of amp; repeat for negative (–).

See Figure 3.15. Turn up both Input Attenuators and set the Mode Switch to Dual.

NOTE: When the “Y” Input Switch is on, the Channel 2 input can be used to daisy-chain to another amplifier.

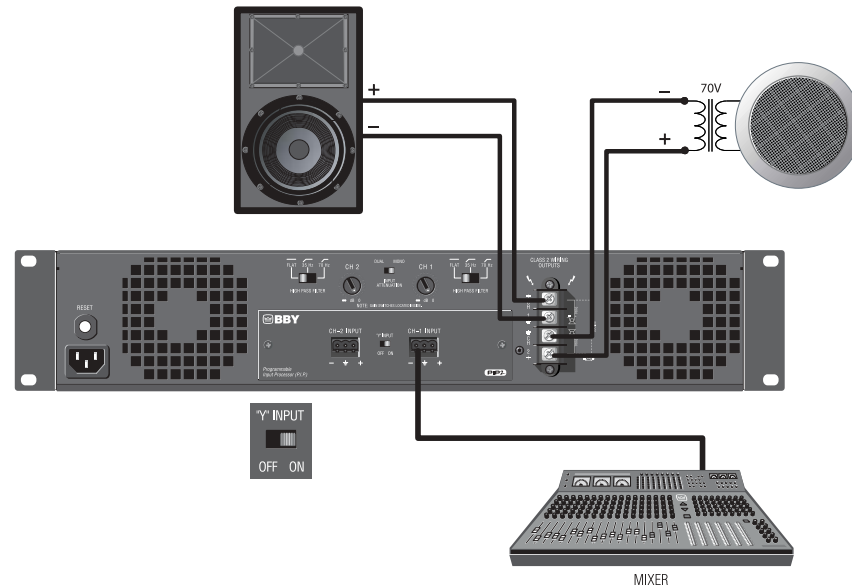
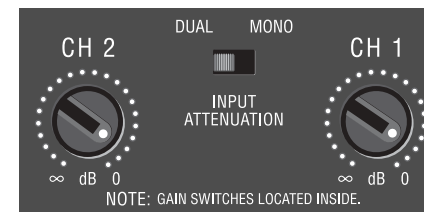


Figure 3.15 System Wiring for “Y” Input Mode

Always route the input and output wires in separate bundles.

Figure 3.16 Attenuator and Mode-Switch Settings for “Y” Input Mode



3 Setup



3.7 Connect to AC Mains

On the back panel, check whether your amplifier is labeled for 120V or 220-240V AC mains. Connect your amplifier to the corresponding AC mains power source (power outlet) with the supplied AC power cordset. First, connect the IEC end of the cordset to the IEC connector on the amplifier. Then, with the amplifier in the OFF position, plug the other end of the cordset into the AC mains.

WARNING: The third prong of this connector (ground) is an important safety feature. Do not attempt to disable this ground connection by using an adapter or other methods.

Amplifiers don't create energy. The AC mains voltage and current must be sufficient to deliver the power you expect. Check the amplifier's back-panel label which specifies the required AC mains voltage and frequency. The AC mains voltage must be no more than 15% above the required voltage, and no less than 25% below the required voltage. The AC mains frequency must be within the required frequency range. If you are unsure of the output voltage of your AC mains, please consult your electrician.

3.8 Startup Procedure

Use the following procedure when first turning on your amplifier:

1. Turn down the level of your audio source.
2. Turn down the level controls of the amplifier.
3. Turn on the "Power" switch. The Power indicator should glow. Wait for the "Ready" LED to illuminate.
4. Turn up the level of your audio source to an optimum level.
5. Turn up the Level controls on the amplifier until the desired loudness or power level is achieved. Verify that the Signal LED is flashing.
6. Turn down the level of your audio source to its normal range.

If you ever need to make any wiring or installation changes, don't forget to turn off the amplifier and disconnect the power cord.

For help with determining your system's optimum gain structure (signal levels) please refer to the Crown *Amplifier Application Guide*, available online at www.crownaudio.com.

4 Operation

4.1 Precautions

Your amplifier is protected from internal and external faults, but you should still take the following precautions for optimum performance and safety:

1. Before use, your amplifier first must be configured for proper operation, including input and output wiring hookup. Improper wiring can result in serious operating difficulties. For information on wiring and configuration, please consult the Setup section of this manual or, for advanced setup techniques, consult Crown's *Amplifier Application Guide* available online at www.crownaudio.com.
2. Use care when making connections, selecting signal sources and controlling the output level. The load you save may be your own!
3. Do not short the ground lead of an output cable to the input signal ground. This may form a ground loop and cause oscillations.
4. **Never connect the output to a power supply, battery or power main. Electrical shock may result.**
5. Tampering with the circuitry, or making unauthorized circuit changes may be hazardous and invalidates all agency listings.
6. Do not operate the amplifier with the red Clip LEDs constantly flashing.
7. Do not overdrive the mixer, which will cause clipped signal to be sent to the amplifier. Such signals will be reproduced with extreme accuracy, and loudspeaker damage may result.
8. Do not operate the amplifier with less than the rated load impedance. Due to the amplifier's output protection, such a configuration may result in premature clipping and speaker damage.



Remember: Crown is not liable for damage that results from overdriving other system components.

4 Operation

4.2 Front Panel Controls and Indicators

A. Fault Indicator

Red LED, one per channel, flashes when the amplifier output channel has stopped operating. Usually this means that the amplifier must be serviced.

B. Thermal Indicator

Red LED, one per channel, illuminates when the channel has shut down, or is very near shutting down, due to thermal stress or overload.

C. Ready Indicator

Green LED, one per channel, illuminates when the channel is initialized and ready to produce audio output. Indicator is off when the channel is set to standby mode via the IQ system.

Signal Indicators

Three green LEDs per channel indicate the amplifier's input and output signal levels. From bottom to top the LEDs are:

D. Signal: input signal is above -40 dBu.

E. -20 dB: amplifier output is within 20 dB of clipping.

F. -10 dB: amplifier output is within 10 dB of clipping.

G. Clip Indicator

Red LED, one per channel, illuminates when the channel's output signal reaches the onset of audible clipping. The Clip Indicator also will illuminate during Thermal Level Control (TLC) limiting or when the input compressor/limiter is protecting the amplifier from input overload.

H. Cooling Vents

Front-to-rear forced airflow.

I. Power Indicator

Blue LED indicates AC power has been applied and is within the safe operating range of the power supply. The LED will flash when the AC line voltage is approximately 15% above or 25% below the nominal rated value.

J. Data Indicator

Yellow LED indicates IQ Loop data activity. This LED is driven by the IQ-PIP2 module via the PIP2 interface. Note: Data indicator flashes only when the installed PIP module is polled for data, or is polled to see whether it is online.

K. Bridge Mode Indicator

Yellow LED illuminates when the rear-panel Mode Switch is set to the "Bridge" position.

L. Power Switch

Push-on / push-off switch.

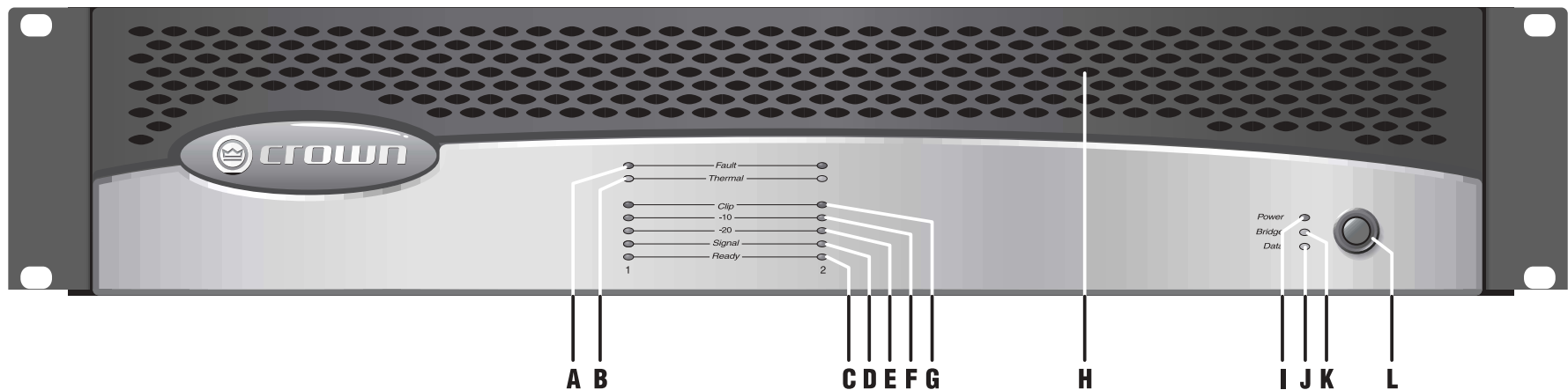


Figure 4.1 CTs 600 front panel.

4 Operation

4.3 Back Panel Controls and Connectors.

CTs 2000/3000 back panel is shown.
CTs 600/1200 look slightly different near the Reset button.

M. Power Cord Connector

Standard 15 amp IEC inlet. A circuit breaker located near the IEC power inlet protects the amplifier from excessive AC current draw.

N. Reset Switch

Resets the circuit breaker that protects the power supply.

O. Ventilation Grille

Air flow is front to back. Do not block the ventilation grilles.

P. PIP™ Input Panel

PIP2-BBY module includes two balanced 3-pin removable barrier connectors. The “Y” Input Switch is described under letter R.

Sensitivity Switches

Behind the input panel are the Input Sensitivity Switches. One 3-position switch per channel selects various sensitivity settings. See Section 5.2.4 for details and diagram.

Q. Mode Switch

This two-position switch is used to select the amplifier's mode of operation: Dual or Bridge Mono.

Dual mode is used for 2/4/8 ohms, for 70V operation with the CTs 600/1200, and for 70/100V operation with the CTs 2000/3000.

Bridge mode is used for 4/8/16 ohms, for 140V operation with the CTs 600/1200, and for 100/140/200V operation with the CTs 2000/3000.

R. “Y” Input Switch

When set to ON, this switch parallels the input signals of the two channels, for use when the input signal is mono. The amplifier's channel outputs are still independent.

The “Y” Input Switch also can be used to daisy-chain the signal to another amplifier. See Section 3.6.5 for details.

S. Input Connectors

Balanced 3-pin terminal block connectors, one per channel.

T. Channel Level Controls

One 21-position detented rotary attenuator per channel, ranging from –100 dB to 0 dB gain.

U. High-Pass Filter

One 3-position switch per channel selects between OFF, 35Hz and 70Hz 3rd-order filters.

V. Speaker Connectors

One four-pole touch-proof terminal strip. Accepts up to 10 AWG terminal forks.

Output Cover (not shown)

This covers the output connectors, protecting users from the connectors' potentially high voltage. This cover is required for Class 2 wiring installations. See Section 3.5 for details on removing covers that have two holes.

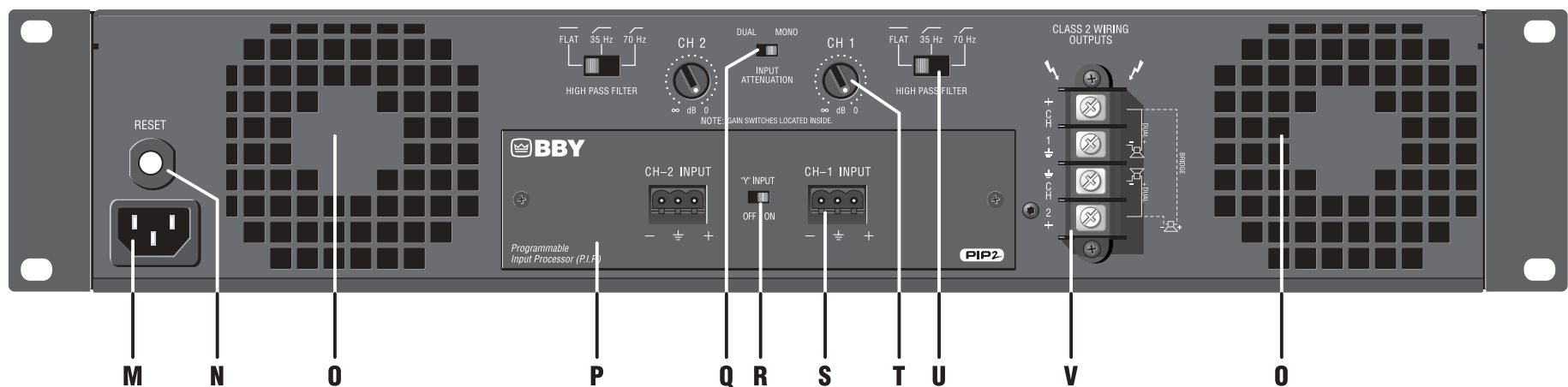


Figure 4.2 CTs 2000 and 3000 Back Panel Controls and Connectors

5 Advanced Features and Options

NOTE: For detailed information about these Crown amplifier features, please consult the *Crown Amplifier Application Guide*, available on the Crown website at www.crownaudio.com

5.1 Protection Systems

Your Crown amplifier provides extensive protection and diagnostic capabilities, including thermal level control, fault indicators, high-pass filtering, DC protect, AC under/over voltage protection, inrush limiting, and variable-speed fans.

5.1.1 Thermal Level Control (TLC)

If the amplifier becomes too hot for safe operation, the light will shine brightly and TLC will engage the input compressor. By compressing the input, the amplifier will not generate as much heat and will have a chance to cool down. The degree of compression is proportional to the amount of overheating. This feature allows the show to go on, rather than having the amplifier shut down.

5.1.2 Junction Temperature Simulation (JTS) (CTs 600/1200 only)

JTS circuitry simulates the operation of the amplifier's output transistors, and compares it against the transistors known Safe Operation Area (SOA). If JTS sees that more power is about to be asked of the output devices than they are capable of delivering under the present conditions, JTS immediately limits the drive level until it falls within the SOA. Limiting is proportional and kept to an absolute minimum—only what is required to prevent the possibility of output transistor damage.

This level of protection enables Crown to increase output transistor utilization while also greatly increasing amplifier reliability.

5.1.3 Fault

The amplifier will light the Fault LED if the amplifier output stage stops operating. If this happens, see Section 8 for servicing information.

5.1.4 High-Pass Filters

Very low frequency signals contain no useful musical energy, waste valuable amplifier power and headroom, and can be damaging to your speakers. Your Crown amplifier provides high-pass filters to remove these signals from each channel's output.

On the back panel are two 3-position 3rd-order high-pass filter switches (one per channel) with selections of Off, 35Hz and 70 Hz.

5.1.5 Low-Pass Filters

Gaussian-approximation ultrasonic filters prevent ultrasonic feedback and HF burnout in drivers. This type of filter preserves transient response better than a Butterworth filter.

5.1.6 AC Under/Over Voltage Protection

If the AC line voltage drops below 25% or rises above 15% of the nominal operating voltage of the amplifier, the amplifier's power supply turns off and the blue Power LED flashes. The amplifier will turn back on when the AC line voltage returns to safe operating levels (within +15% / -25%).

5.1.7 Circuit Breaker

A circuit breaker located near the IEC power inlet protects the amplifier from excessive AC current draw.

5.1.8 DC Output Servo

The output servo circuit protects your drivers by eliminating DC offset, even in the presence of very large asymmetrical signals.

5.1.9 Inrush Limiting

A soft-start circuit in the power supply minimizes the amplifier's current draw during power-on.

5.1.10 Variable-speed Fans

Two continuously variable speed fans direct the airflow through the amplifier for cooling.

5.2 Advanced Features

5.2.1 Switching Power Supply

Crown's Switching Power Supply minimizes the amplifier's weight.

Typical non-switching power supplies require large, heavy transformers in order to produce the required power at the output stage. These transformers must be large to operate at 50 to 60 Hz (standard AC supplied by the power company).

By contrast, switching power supplies can operate with a much smaller (and lighter) transformer because they first convert the AC up to a much higher frequency, thereby reducing waste.

The power supply is voltage-specific, allowing use in regions using 120V or 240V.

5.2.2 Input Compressor

Prevent input/output overload.

5.2.3 Sleep Circuit

Lowers standby power consumption by shutting down the high-voltage supplies during idle periods.

NOTE: By default, the sleep circuit is not active on the CTs 600/1200, but may be activated as a service option.

5 Advanced Features and Options

5.2.4 Input Sensitivity Switches

To access the Input Sensitivity Switches, turn off the amplifier and remove the PIP2-BBY Input Panel. The switches are in the top surface of the cavity behind the Input Panel. One 3-position switch per channel selects among these settings: CTs 600/1200: 1.4V (8/4 ohms), 26 dB gain, and 1.4V (70V operation). CTs 2000/3000: 1.4V (8/4 ohms), 26 dB gain, and 1.4V (70V) / 2V (100V). The Specifications chapter lists the input sensitivity for the 26 dB gain setting.



Figure 5.1 Input Sensitivity Switches for CTs 600/1200

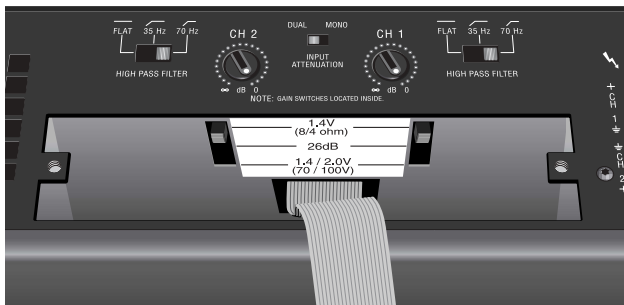


Figure 5.2 Input Sensitivity Switches for CTs 2000/3000

5.3 Options

T-170V: See Figure 5.3. This is an autoformer that allows 100V output from the CTs 600/1200, and allows other amplifiers without direct constant voltage output to be easily integrated into distributed systems.

TP-170V: See Figure 5.4. This is a rack-mountable panel with four autoformers as described above.

PIP Modules

Versatile PIP (Programmable Input Processor) modules provide flexible expansion features that can be added to customize the amplifier. PIP modules plug into the connector inside the back panel of the amplifier. PIP modules are available with features ranging from error-driven compressor/limiters to crossovers to IQ control. Your amplifier is a PIP2 amplifier, which means it can take advantage of the many advanced features found in PIP2 modules. The CTs Series 2-channel models do not accept earlier PIP modules.

Visit the Crown website at www.crownaudio.com, or contact Crown Customer Service, for descriptions of available PIP and PIP2 modules.

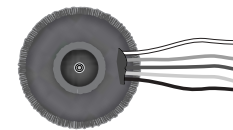


Figure 5.3 T-170V

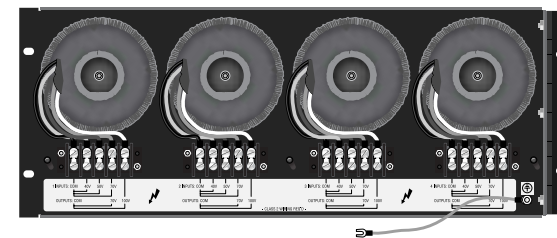


Figure 5.4 TP-170V (back view)

5 Advanced Features and Options

5.3.1 Nominal Attenuation Settings

The signal level for each input can be attenuated accurately by adjusting the 21-step Level Control (see Section 4.3). Figure 5.5 shows the attenuation in dB for each detent. The setting of the input-sensitivity switch varies the actual attenuation as shown.

The accuracy of the attenuation varies with the setting. Expected tolerances are:

Potentiometer steps 0-6 dB: ± 1 dB

Potentiometer steps 6-12 dB: ± 1.5 dB

Potentiometer steps 12-24 dB: ± 3 dB

Potentiometer steps 24-54 dB: ± 6 dB

Detent	26 dB	4/8 ohm or 70/100V
0 (full CW)	0.0	0.0
1	0.5	0.5
2	1.0	1.5
3	2.0	3.5
4	3.0	5.0
5	4.0	6.5
6	5.0	8.0
7	6.0	9.5
8	7.0	11.0
9	8.0	13.0
10	9.0	14.5
11	10.5	16.0
12	12.0	18.0
13	13.5	20.0
14	15.0	22.0
15	18.0	24.0
16	21.0	26.0
17	24.0	30.0
18	36.0	42.0
19	48.0	54.0
20 (full CCW)	OFF	OFF

Figure 5.5 Attenuation vs. Detent of Level Controls for CTs 2-Channel Amplifiers

6 Troubleshooting

CONDITION: Power indicator is off.

POSSIBLE REASON

- The amplifier has lost AC power.
- The amplifier's Power switch is off.
- The amplifier is not plugged into the power receptacle.
- The amplifier output level is so high that the power supply circuit breaker has tripped. Allow the unit to cool. Turn down the Level controls. Press the Reset Switch on the back panel.

CONDITION: Fault indicator is flashing.

POSSIBLE REASON:

- The amplifier channel has stopped operating. Refer the unit to an authorized Crown Service Center.

CONDITION: Power indicator is flashing.

POSSIBLE REASON:

- The AC line voltage has dropped below 25% or has risen above 15% of the nominal line voltage of the power supply.

CONDITION: Distorted sound.

POSSIBLE REASON:

- Load is wired incorrectly or Stereo/Mono mode switch is set incorrectly. Check both.
- Input is overloaded by a signal level that is too high. Turn down your amplifier level controls, or turn down the input signal, until the clip light goes out.

Note: If the signal sounds distorted even though the Clip LED is off, the input signal may be distorted before it reaches the amplifier input. Check gain staging and output levels of the mixer or preamp.

CONDITION: Thermal indicator is on.

POSSIBLE REASON:

- The amplifier is becoming too hot for safe operation. Allow amplifier to cool. Check for loads less than 2 ohms, and for excessive input levels. Check for proper ventilation and proper mode-switch setting.

Key

- Off
- ◐ Flashing
- Off/Flashing/On
- ☀ Lit

"Off/Flashing/On" above means that the LED can be off, or flashing, or on.

6 Troubleshooting

Fault —●— Thermal —●— Clip —●— -10 —●— -20 —●— Signal —○— Ready —○—	Power —●— Bridge —○— Data —○—		<p>CONDITION: No sound, even though the amp has power. Power LED is on without flashing and the amp is receiving an input signal. Signal indicator is flashing.</p> <p>POSSIBLE REASON:</p> <ul style="list-style-type: none"> • Speakers not connected. • Open circuit due to speaker failure.

Fault —●— Thermal —●— Clip —○— -10 —○— -20 —○— Signal —○— Ready —○—	Power —●— Bridge —○— Data —○—		<ul style="list-style-type: none"> • There is a short on the amplifier output. First disconnect your speakers from the affected channel(s) one by one to determine if one of the loads is shorted.

Fault —●— Thermal —●— Clip —●— -10 —●— -20 —●— Signal —●— Ready —●—	Power —●— Bridge —●— Data —●—		<ul style="list-style-type: none"> • Ready LED is off. Channel has been set to standby mode via the IQ system.

Fault —●— Thermal —●— Clip —●— -10 —●— -20 —●— Signal —○— Ready —○—	Power —●— Bridge —○— Data —○—		<p>CONDITION: No input signal. Signal indicator is not flashing even though audio is applied, and the channel is ready.</p> <p>POSSIBLE REASON:</p> <ul style="list-style-type: none"> • Input signal level is very low. • Level controls are turned down.
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Power —○— Bridge —○— Data —●—		<p>CONDITION: Data indicator not flashing, even though PIP module is installed and host computer IQ software is active.</p> <p>POSSIBLE REASON:</p> <ul style="list-style-type: none"> • Cable between computer and PIP module is broken or not connected. <p>Note: Data indicator flashes only when the installed PIP2 module is polled for data, or is polled to see whether it is online.</p>
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Key	● Off
○ (with vertical line)	Flashing
○ (with horizontal line)	Off/Flashing/On
○ (with sunburst)	Lit

"Off/Flashing/On" above means that the LED can be off, or flashing, or on.

7 Specifications

Minimum Guaranteed Power (20 Hz - 20 kHz)	CTs 600 Power at 0.1% THD	CTs 1200 Power at 0.1% THD	CTs 2000 Power at 0.35% THD	CTs 3000 Power at 0.35% THD
2-ohm Dual (per ch.)	150W	250W	1000W	1500W
4-ohm Dual (per ch.)	300W	600W	1000W	1500W
8-ohm Dual (per ch.)	300W	600W	1000W	1250W
16-ohm Dual (per ch.)	300W	300W	625W	625W
70V Dual (per ch.)	300W	600W	1000W	1500W
100V Dual (per ch.)	300W*	600W*	1000W	1500W
4-ohm Bridge	300W	500W	2000W	3000W
8-ohm Bridge	600W	1200W	2000W	3000W
16-ohm Bridge	600W	1200W	2000W	2500W
100V Bridge	600W*	1200W*	2000W	3000W
140V Bridge	600W	1200W	2000W	3000W
200V Bridge	600W*	1200W*	2000W	3000W
Performance	CTs 600	CTs 1200	CTs 2000	CTs 3000
Frequency Response (at 1 watt, 20 Hz - 20 kHz)	± 0.25 dB	± 0.25 dB	± 0.25 dB	± 0.25 dB
Signal to Noise Ratio (ref. rated power, 20 Hz to 20 kHz, A-weighted)	< 105 dB	< 105 dB	< 105 dB	< 105 dB
Total Harmonic Distortion (THD) at full rated power, from 20 Hz to 20 kHz	< 0.1%	< 0.1%	< 0.35%	< 0.35%
Intermodulation Distortion (IMD) 60 Hz and 7 kHz at 4:1, from -40 dB to full rated power	< 0.1%	< 0.1%	< 0.35%	< 0.35%
Damping Factor: 10 Hz to 100 Hz	> 3000	> 3000	> 3000	> 3000
Crosstalk (below rated power) 20 Hz to 1kHz	> 80 dB	> 80 dB	> 80 dB	> 80 dB
Common Mode Rejection (CMR) (20 Hz to 1 kHz, typical)	50 dB	50 dB	50 dB	50 dB
DC Output Offset	< 2 mV	< 2mV	< 2 mV	< 2 mV
Input Impedance nominally balanced, nominally unbalanced	10 k ohms, 5 k ohms	10 k ohms, 5 k ohms	10 k ohms, 5 k ohms	10 k ohms, 5 k ohms

* With T-170V or TP-170V.

7 Specifications

Performance	CTs 600	CTs 1200	CTs 2000	CTs 3000
Maximum Input Level Before input compression Absolute maximum	+20 dBu + 32 dBu	+20 dBu + 32 dBu	+20 dBu + 32 dBu	+20 dBu + 32 dBu
Load Impedance (Note: Safe with all types of loads) Stereo Bridge Mono	2, 4, 8, 16 ohms and 70V 4, 8, 16 and 140V	2, 4, 8, 16 ohms and 70V 4, 8, 16 and 140V	2, 4, 8, 16, 70V, and 100V 4, 8, 16, 140V , 200V	2, 4, 8, 16, 70V, and 100V 4, 8, 16, 140V, 200V
Voltage Gain (at maximum level setting) 8/4 Ohm Operation 26 dB 70V Operation 100V Operation	35:1 (31 dB) 20:1 (26 dB) 50:1 (34 dB)	50:1 (34 dB) 20:1 (26 dB) 50:1 (34 dB)	63.9:1 (36 dB) 20:1 (26 dB) 50:1 (34 dB) 50:1 (34 dB)	71.4:1 (37 dB) 20:1 (26 dB) 50:1 (34 dB) 50:1 (34 dB)
Input Sensitivity 2/4/8 ohms 70V 100 V 26 dB gain	1.4V 1.4V 4 ohm load: 1.74V. 8 ohm load: 2.46V	1.4V 1.4V 4 ohm load: 2.46V. 8 ohm load: 3.47V	1.4V 1.4V 2.0V 4 ohm load: 3.17V. 8 ohm load: 4.48V	1.4V 1.4V 2.0V 4 ohm load: 3.88V. 8 ohm load: 5.01V
Required AC Mains (+15%, – 25%)	120V/60 Hz, 230V/50 Hz	120V/60 Hz, 230V/50 Hz	120V/60 Hz, 230V/50 Hz	120V/60 Hz, 230V/50 Hz
Power Draw at Idle (120 VAC mains)	24W (Standby Mode)	24W (Standby Mode)	35W (Standby Mode)	35W (Standby Mode)
Overall Group Delay	< 120 usec	< 120 usec	< 120 usec	< 120 usec
Cooling	Continuously variable speed forced air, front-to-back airflow	Continuously variable speed forced air, front-to-back airflow	Continuously variable speed forced air, front-to-back airflow	Continuously variable speed forced air, front-to-back airflow
Dimensions Width Height Depth	19 in. (48.3 cm.) 3.5 in. (8.9 cm.) 14.25 in. (36.2 cm.)	19 in. (48.3 cm.) 3.5 in. (8.9 cm.) 14.25 in. (36.2 cm.)	19 in. (48.3 cm.) 3.5 in. (8.9 cm.) 14.25 in. (36.2 cm.)	19 in. (48.3 cm.) 3.5 in. (8.9 cm.) 14.25 in. (36.2 cm.)
Net Weight Shipping Weight	22.8 lb (10.3 kg), 27.7 lb (12.6 kg)	23.4 lb (10.6 kg), 28.3lb(12.8kg)	27.0 lb (12.2 kg) 32.0 lb (14.5 kg)	27.7 lb (12.6 kg) 32.7 lb (14.8 kg)

7 Specifications

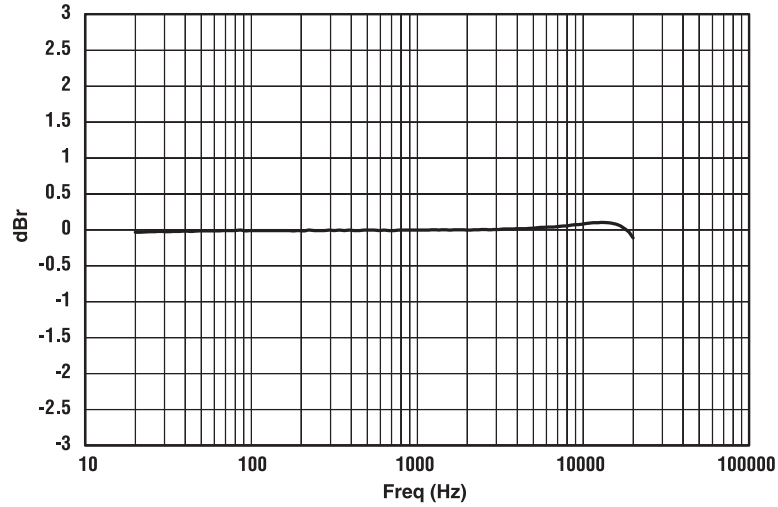


Figure 7.1 CTs 600/1200 Typical Frequency Response (1 W, 8 ohms)

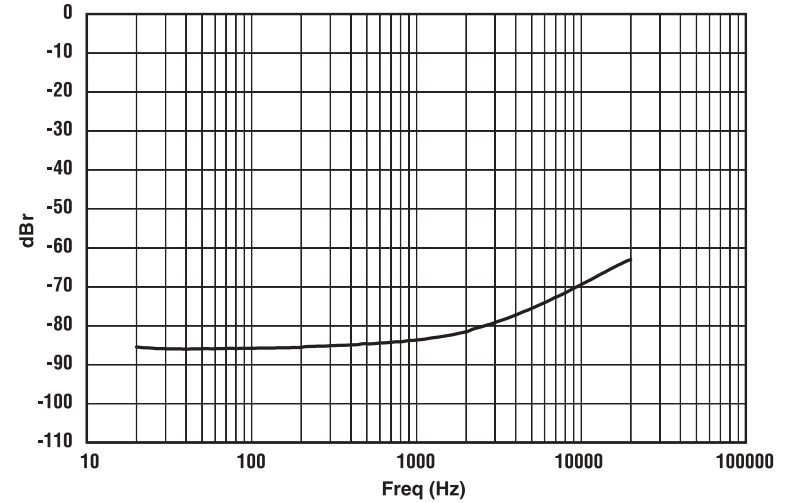
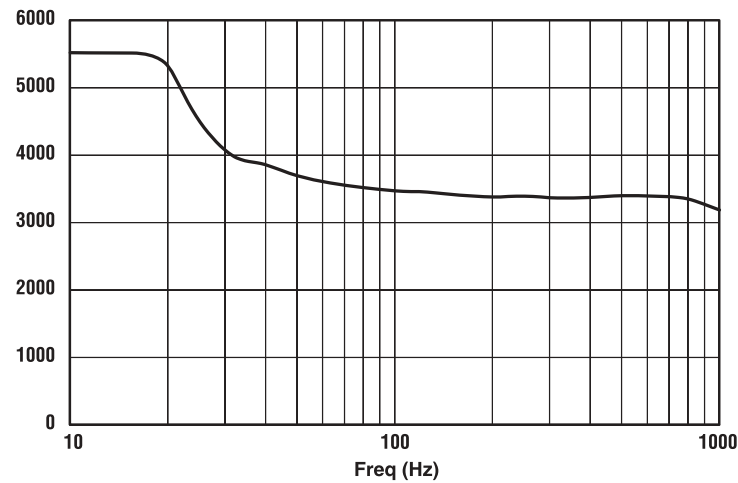


Figure 7.2 CTs 600/1200 Typical Crosstalk vs. Frequency

Figure 7.3
CTs 600/1200
Typical Damping Factor
vs. Frequency



7 Specifications

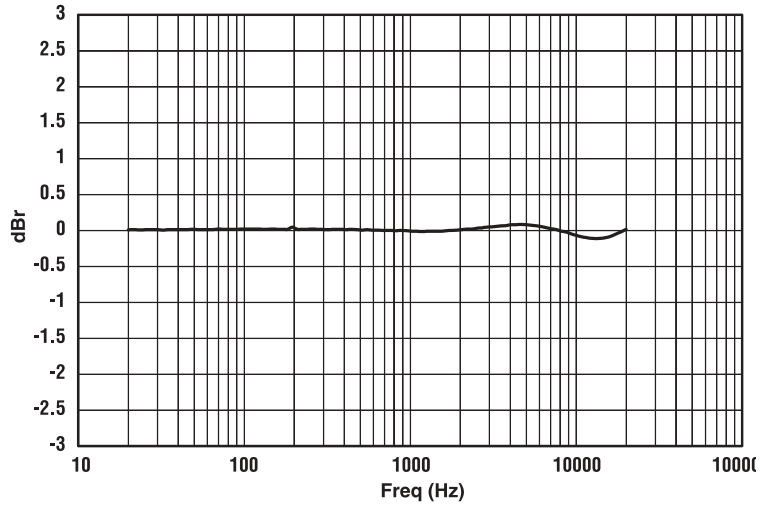


Figure 7.4 CTs 2000/3000 Typical Frequency Response (1W)

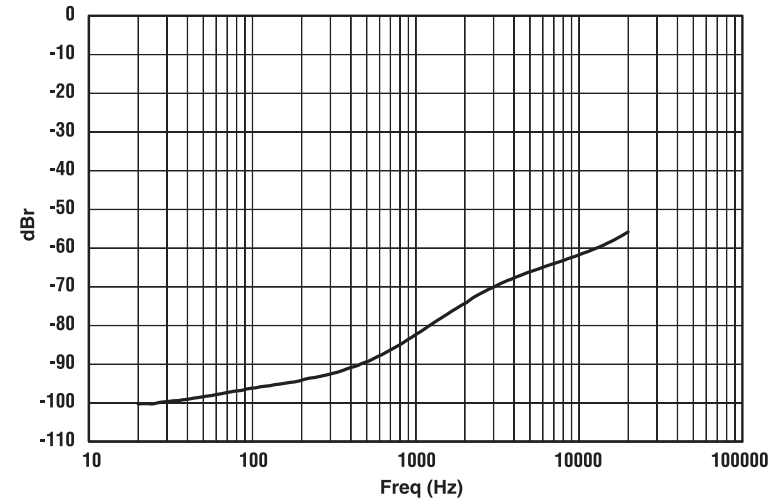
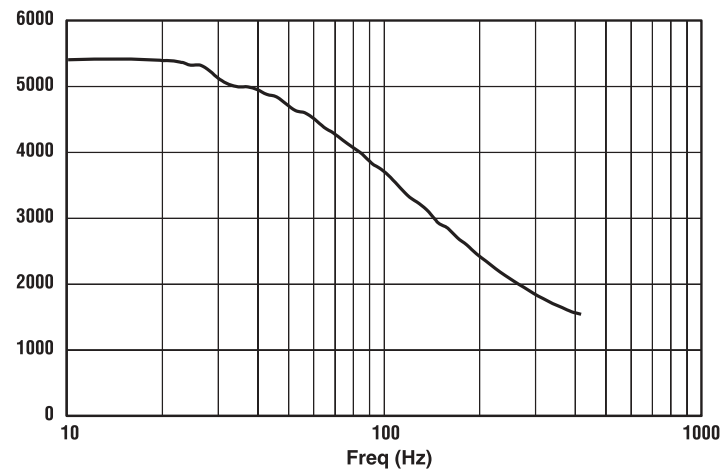


Figure 7.5 CTs 2000/3000 Typical Crosstalk vs. Frequency

Figure 7.6
CTs 2000/3000
Typical Damping Factor
vs. Frequency



8 Service

Crown amplifiers are quality units that rarely require servicing. Before returning your unit for servicing, please contact Crown Technical Support to verify the need for servicing.

This unit has very sophisticated circuitry which should only be serviced by a fully trained technician. This is one reason why each unit bears the following label:



CAUTION: To prevent electric shock, do not remove covers. No user serviceable parts inside. Refer servicing to a qualified technician.

8.1 Worldwide Service

Service may be obtained from an authorized service center. (Contact your local Crown/Amcron representative or our office for a list of authorized service centers.) To obtain service, simply present the bill of sale as proof of purchase along with the defective unit to an authorized service center. They will handle the necessary paperwork and repair.

Remember to transport your unit in the original factory pack.

8.2 US and Canada Service

Service may be obtained in one of two ways: from an authorized service center or from the factory. You may choose either. It is important that you have your copy of the bill of sale as your proof of purchase.

8.2.1 Service at a US or Canada Service Center

This method usually saves the most time and effort. Simply present your bill of sale along with the defective unit to an authorized service center to obtain service. They will handle the necessary paperwork and repair. Remember to transport the unit in the original factory pack. A list of authorized service centers in your area can be obtained from the Crown website at www.crownaudio.com, or by calling Crown Factory Service.

8.2.2 Factory Service

To obtain factory service, fill out the service information page found in the back of this manual and send it along with your proof of pur-

chase and the defective unit to the Crown factory.

For warranty service, we will pay for ground shipping both ways in the United States. Contact Crown Factory Service to obtain prepaid shipping labels prior to sending the unit. Or, if you prefer, you may prepay the cost of shipping, and Crown will reimburse you. Send copies of the shipping receipts to Crown to receive reimbursement.

Your repaired unit will be returned via UPS ground. Please contact us if other arrangements are required.

8.2.3 Factory Service Shipping Instructions:

1. Before sending a Crown product to the factory for service, first call the Crown Service Department for a return authorization (RA) number.
2. Be sure to fill out the service information form that follows and enclose it with your shipment, either inside the box or in a packing slip envelope securely attached to the outside of the shipping carton. Do not send the service information form separately. If you are sending the unit from a Shipping Center, we recommend taping the form to the product. We also recommend recording the serial number and model before shipping for your reference.
3. Keep a copy of the serial number and model.

To ensure the safe transportation of your unit to the factory, ship it in an original factory packing container. If you don't have the original carton, you may obtain a product service foam-in-place shipping pack from Crown Factory Service at the number listed below. For non-warranty service, you may also provide your own shipping pack, however we still recommend using a Crown Supplied Shipping Container. Minimum recommended requirements for materials are as follows: 275 P.S.I. burst test Double-Wall carton that allows for 2-inch solid Styrofoam on all six sides of unit or 3 inches of plastic bubble wrap on all six sides of unit; securely seal the package with an adequate car-

ton sealing tape. Do not use light boxes or "peanuts." Damage caused by poor packing cannot be covered under warranty.

4. Do not ship the unit in any kind of cabinet (wood or metal). Ignoring this warning may result in extensive damage to the unit and the cabinet. Accessories are not needed—do not send the product documentation, cables and other hardware.

If you have any questions, please contact Crown Factory Service.

Crown Factory Service

1718 W. Mishawaka Rd.,
Elkhart, Indiana 46517 U.S.A.

Telephone: 574-294-8200
800-342-6939 (North America,
Puerto Rico, and Virgin Islands only)

Facsimile:
574-294-8301 (Technical Support)
574-294-8124 (Factory Service)

Internet:
<http://www.crownaudio.com>

8.2.4 Crown's Profit Protection Plan

In the United States, your CTs series amplifier is also covered by Crown's advance-replacement Profit Protection Plan, an enhancement to Crown's exceptional Three-Year, No-Fault, Full Warranty. Crown's Profit Protection Plan guarantees replacement of your covered amplifier should it fail at any time during the original three-year warranty period following the date of original purchase.

Simply contact your local Crown dealer or distributor with model and serial number information to initiate a claim. Your dealer will supply full details on return procedures for the defective unit as well as standard and optional delivery times and methods for the replacement amplifier. Before any claim will be honored, Crown Factory Service will verify that there is a problem with the unit.

For more information on the Profit Protection Plan, please contact Crown Factory Service or your local Crown representative.

9 Warranty



SUMMARY OF WARRANTY

Crown International, 1718 West Mishawaka Road, Elkhart, Indiana 46517-4095 U.S.A. warrants to you, the ORIGINAL PURCHASER and ANY SUBSEQUENT OWNER of each NEW Crown product, for a period of three (3) years from the date of purchase by the original purchaser (the "warranty period") that the new Crown product is free of defects in materials and workmanship. We further warrant the new Crown product regardless of the reason for failure, except as excluded in this Warranty.

ITEMS EXCLUDED FROM THIS CROWN WARRANTY

This Crown Warranty is in effect only for failure of a new Crown product which occurred within the Warranty Period. It does not cover any product which has been damaged because of any intentional misuse, accident, negligence, or loss which is covered under any of your insurance contracts. This Crown Warranty also does not extend to the new Crown product if the serial number has been defaced, altered, or removed.

WHAT THE WARRANTOR WILL DO

We will remedy any defect, regardless of the reason for failure (except as excluded), by repair, replacement, or refund. We may not elect refund unless you agree, or unless we are unable to provide replacement, and repair is not practical or cannot be timely made. If a refund is elected, then you must make the defective or malfunctioning product available to us free and clear of all liens or other encumbrances. The refund will be equal to the actual purchase price, not includ-

UNITED STATES & CANADA

ing interest, insurance, closing costs, and other finance charges less a reasonable depreciation on the product from the date of original purchase. Warranty work can only be performed at our authorized service centers or at the factory. Warranty work for some products can only be performed at our factory. We will remedy the defect and ship the product from the service center or our factory within a reasonable time after receipt of the defective product at our authorized service center or our factory. All expenses in remedying the defect, including surface shipping costs in the United States, will be borne by us. (You must bear the expense of shipping the product between any foreign country and the port of entry in the United States including the return shipment, and all taxes, duties, and other customs fees for such foreign shipments.)

HOW TO OBTAIN WARRANTY SERVICE

You must notify us of your need for warranty service within the warranty period. All components must be shipped in a factory pack, which, if needed, may be obtained from us free of charge. Corrective action will be taken within a reasonable time of the date of receipt of the defective product by us or our authorized service center. If the repairs made by us or our authorized service center are not satisfactory, notify us or our authorized service center immediately.

DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

YOU ARE NOT ENTITLED TO RECOVER FROM US ANY INCIDENTAL DAMAGES RESULTING

FROM ANY DEFECT IN THE NEW CROWN PRODUCT. THIS INCLUDES ANY DAMAGE TO ANOTHER PRODUCT OR PRODUCTS RESULTING FROM SUCH A DEFECT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

WARRANTY ALTERATIONS

No person has the authority to enlarge, amend, or modify this Crown Warranty. This Crown Warranty is not extended by the length of time which you are deprived of the use of the new Crown product. Repairs and replacement parts provided under the terms of this Crown Warranty shall carry only the unexpired portion of this Crown Warranty.

DESIGN CHANGES

We reserve the right to change the design of any product from time to time without notice and with no obligation to make corresponding changes in products previously manufactured.

LEGAL REMEDIES OF PURCHASER

THIS CROWN WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. No action to enforce this Crown Warranty shall be commenced after expiration of the warranty period.

THIS STATEMENT OF WARRANTY SUPERSEDES ANY OTHERS CONTAINED IN THIS MANUAL FOR CROWN PRODUCTS 12/01

9 Warranty

WORLDWIDE EXCEPT USA & CANADA



SUMMARY OF WARRANTY

Crown International, 1718 West Mishawaka Road, Elkhart, Indiana 46517-4095 U.S.A. warrants to you, the ORIGINAL PURCHASER and ANY SUBSEQUENT OWNER of each NEW Crown1 product, for a period of three (3) years from the date of purchase by the original purchaser (the "warranty period") that the new Crown product is free of defects in materials and workmanship, and we further warrant the new Crown product regardless of the reason for failure, except as excluded in this Warranty.

¹ Note: If your unit bears the name "Amcron," please substitute it for the name "Crown" in this warranty.

ITEMS EXCLUDED FROM THIS CROWN WARRANTY

This Crown Warranty is in effect only for failure of a new Crown product which occurred within the Warranty Period. It does not cover any product which has been damaged because of any intentional misuse, accident, negligence, or loss which is covered under any of your insurance contracts. This Crown Warranty also does not extend to the new Crown product if the serial number has been defaced, altered, or removed.

WHAT THE WARRANTOR WILL DO

We will remedy any defect, regardless of the reason for failure (except as excluded), by repair, replacement, or refund. We may not elect refund unless you agree, or unless we are unable to provide replacement, and repair is not practical or cannot be timely made. If a refund is elected, then you must make the defective or malfunctioning product available to us free and clear of all liens or other encumbrances. The refund will be equal to the actual purchase price, not including interest, insurance, closing costs, and other finance charges less a reasonable depreciation on the product from the date of original purchase. Warranty work can only be performed at our authorized service centers. We will remedy the defect and ship the product from the service center within a reasonable time after receipt of the defective product at our authorized service center.

HOW TO OBTAIN WARRANTY SERVICE

You must notify your local Crown importer of your need for warranty service within the warranty period. All components must be shipped in the original box. Corrective action will be taken within a reasonable time of the date of receipt of the defective product by our authorized service center. If the repairs made by our authorized service center are not satisfactory, notify our authorized service center immediately.

DISCLAIMER OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

YOU ARE NOT ENTITLED TO RECOVER FROM US ANY INCIDENTAL DAMAGES RESULTING FROM ANY DEFECT IN THE NEW CROWN PRODUCT. THIS INCLUDES ANY DAMAGE TO ANOTHER PRODUCT OR PRODUCTS RESULTING FROM SUCH A DEFECT.

WARRANTY ALTERATIONS

No person has the authority to enlarge, amend, or modify this Crown Warranty. This Crown Warranty is not extended by the length of time which you are deprived of the use of the new Crown product. Repairs and replacement parts provided under the terms of this Crown Warranty shall carry only the unexpired portion of this Crown Warranty.

DESIGN CHANGES

We reserve the right to change the design of any product from time to time without notice and with no obligation to make corresponding changes in products previously manufactured.

LEGAL REMEDIES OF PURCHASER

No action to enforce this Crown Warranty shall be commenced after expiration of the warranty period.

THIS STATEMENT OF WARRANTY SUPERSEDES ANY OTHERS CONTAINED IN THIS MANUAL FOR CROWN PRODUCTS. 7/01



Crown Factory Service Information

Shipping Address: Crown Factory Service, 1718 W. Mishawaka Rd., Elkhart, IN 46517

Phone: 1-800-342-6939 or 1-574-294-8200 Fax: 1-574-294-8124

Owner's Name : _____

Shipping Address: _____

Phone Number: _____ Fax Number: _____ Email _____

Model: _____ Serial Number: _____

Purchase Date : _____

NATURE OF PROBLEM

(Be sure to describe the conditions that existed when the problem occurred and what attempts were made to correct it.)

Other equipment in system: _____

If warranty has expired, payment will be: Cash/Check Visa Master Card C.O.D. Purchase Order for Crown Dealer

Card Number: _____ Exp. Date: _____

Signature: _____

ENCLOSE THIS PORTION WITH THE UNIT. DO NOT MAIL SEPARATELY.



H A Harman International Company



Addendum To Operation Manual

Note: This addendum pertains to **Section 3 - Setup**
Section 5 - Advanced Features and Options
Section 9 - Service

It is important that you review this addendum before reviewing the Operation Manual.

Section 3

With reference to the **DUAL/MONO** mode switch:

Dual mode allows each amplifier channel to operate independently like a stereo amplifier. Installation is intuitive - input Channel 1 feeds output Channel 1 and input Channel 2 feeds output Channel 2. To put the amplifier into the Dual mode, turn it off, slide the DUAL/MONO switch to DUAL, and properly connect the output wiring.

The MONO switch setting is the BRIDGE-MONO mode and is used to drive loads with a total impedance of at least 4 ohms. For distributed loudspeaker systems, 140 volts (twice the normal 70-volt output) is produced. To put the amplifier into the Bridge-Mono mode, turn it off, and slide the DUAL/MONO switch to MONO. Both outputs will receive the signal from Channel 1 with the output of Channel 2 inverted so it can be bridged with the Channel 1 output. **Please note that there is no provision for paralleling the outputs to obtain a single high-powered 70-volt constant voltage output.**

Section 5

Federal Signal will not offer the T- 170V, TP- 170V, or PIP Modules as indicated in Section 5.3 -Options.

Section 9

For any service related issues, please contact Crown Technical Support. Return the unit to Crown Factory Service, or to a Crown authorized service center if repairs need to be made.



FEDERAL SIGNAL CORPORATION

Electrical Products

MODELS AR2000-M, AR2000-P AND AR2000-Z AUDIO ROUTER DEVICES

INSTALLATION AND SERVICE INSTRUCTIONS

**INSTALLATION AND SERVICE INSTRUCTIONS
FOR
MODELS AR2000-M, AR2000-P AND AR2000-Z, AUDIO ROUTER DEVICES**

SAFETY MESSAGE TO INSTALLERS

People's safety depends on your safe installation of our products. It is important to read, understand and follow all instructions shipped with this product.

Selection of mounting location for this device, its controls and routing of wiring should be made by the Facilities Engineer and the Safety Engineer. Listed below are other important safety instructions and precautions you should follow.

- This unit must be installed and maintained by a qualified electrician in accordance with the National Electrical Code (NFPA 70) or other national or local codes, under the direction of the local authority having jurisdiction.
- Do not connect this unit to system wiring when circuits are energized.
- For optimum sound distribution do not overload the output lines.
- All audio devices produce loud sounds which, in certain circumstances, may cause permanent hearing loss. Take appropriate precautions such as wearing hearing protection. Recommendations in OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.
- After installation and completion of initial system test, provide a copy of this instruction sheet to all personnel responsible for operation, periodic testing and maintenance of this equipment.

I. GENERAL.

1-1. GENERAL DESCRIPTION.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Model AR2000-M (see figure 1-1) Audio Router, is a UL listed and cUL certified central control device that is capable of routing a selected audio input to specific zones. It can control signals to speakers designed for 25Vrms line operation or 70Vrms line operation. It can also control 1Vrms signals intended to be amplified with a separate amplification device. The AR2000-M has a public address (PA) function so voice messages or instructions can be announced over the Audio Router system through an optional Model MSB-1 or MNC-1 Micro-

phone. The unit can also be used to play background music generated from an external source over the Audio Router system.

The Model AR2000-M is an audio multiplexing device. It is capable of handling two inputs from any of three different selected source voltages of 1, 25 or 70 volts. The unit has 8 selectable zones which either the A or the B source is routed to. There is an all call button that selects all zones. There are also 8 programmable presets on the unit. The presets are initiated by the front panel buttons or by remote contacts wired to the back panel. The front panel also has a monitor speaker jack. A microphone jack is also available for use with a MSB-1. The microphone has priority over the two user supplied sources. The telephone feature is protected by an 8 key password. Options available allow changing the password and recording a message for broadcasting. Commands entered via the telephone key pad allow the user to send a message to specified zones. The microphone and the telephone interface have the same priority. If the microphone is in use, the telephone interface is disabled. If the phone message system is in use, the microphone is disabled.

If more than eight zones or eight presets are needed by the user, a separate AR2000-Z (See Figure 1-2), zone unit, or AR2000-P (See Figure 1-3), preset unit is available. Each AR2000-Z or AR2000-P unit will add an additional eight zone or preset controls respectively. Up to seven additional Preset or Zone units may be added for a total of 64 zones and 64 presets.

The Model MNC-1 microphone is a hand held, noise canceling microphone that is ideal for use as a local microphone. The Model MSB-1 microphone (See Figure 1-4) is a base station type microphone designed for desktop operation.

The Model AR2000-M may be installed in indoor installations only as a rack mounted device.

The Model AR2000-M is a rack mount unit that will fit any standard 19" rack mount cabinet. The Model AR2000-M can be used for a variety of prioritized signaling purposes, such as playing background music, paging, start and dismissal, phone messaging and other communication applications. Additional advantages of the Model AR2000-M include economical system expansion and long term system flexibility.

The Model AR2000-M routes audio signals and applies them through zone outputs to the devices in the system. The AR2000-M connects easily with

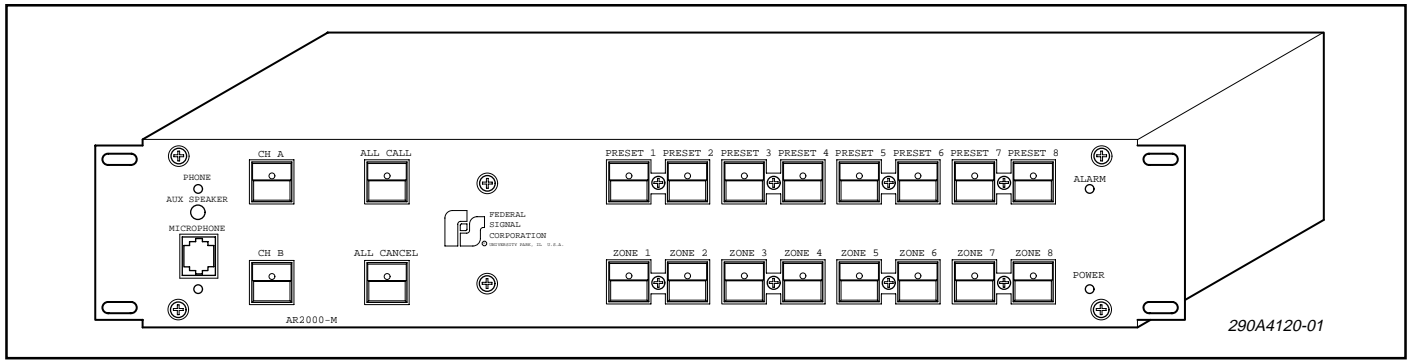


Figure 1-1.

Selectone amplified speakers. A Model AM25CK or AM70CK Connector Kit is required in each Selectone device to connect it to the signal line. The Audio Router device supplies 15W at either 25Vrms or 70Vrms. An additional amplifier must be supplied to obtain higher wattage levels. Care must be taken to ensure that the total line impedance of all the connected devices does not cause the line voltage to drop.

Each preset can be manually activated locally with its associated push button switch on the front panel or with a contact closure at the associated preset control input on the back panel. Whenever a preset is activated, either locally or remotely, its associated front panel push button LED illuminates to indicate that the preset has been activated. The LED remains lit until the preset is deactivated or the remote contact closure is removed. As an added feature, when a preset is remotely activated, the associated LED illuminates and flashes until the remote contact closure is removed. All AR2000-M controls are located on the front panel except gain adjustments which are made on the back panel during installation.

Operation (normal mode)

Pressing the Channel A or Channel B button will immediately switch the input to that channel; the speaker indicator lights will indicate what speakers are connected. Pushing a speaker button will turn that speaker on or off; pushing a preset button will select speakers per that preset, and may also select Channel A or B (if that preset was configured for a specific channel). Keying the microphone while in this mode will cause the microphone signal

to be sent to the selected speakers; releasing the microphone will allow Channel A or B operation to resume.

Keying the Microphone button will allow the user to direct audio to specific zones (default is All-Call). The user may select zones using either individual speaker or preset buttons; Channel A or B operation will not be interrupted until the microphone is actually keyed. Releasing the microphone will allow Channel A or B to resume operation on its selected speakers.

Pressing the All Call button (whether the unit is in Microphone mode or Channel A/B mode) will cause all zones to be selected. Pressing any individual zone when All Call is lit, however, will cancel all the zones except that one.

Pressing All Call will perform the following function:

If all of the zones are not selected, "All Call" will select all 64 zones. Otherwise, pressing "All Call" will cancel all of the zones.

Telephone operation

When the line attached to the Router is called, the router will answer with the Message "ENTER PASSWORD". The caller is required to enter their 8 digit password. The caller is given 2 chances to enter the correct password.

If the correct password is not entered, the caller hears the message "GOODBYE" and the system hangs up the phone line.

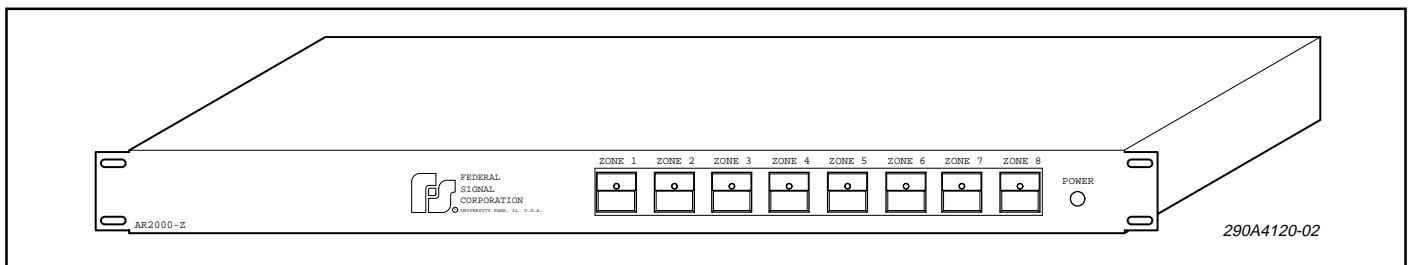


Figure 1-2.

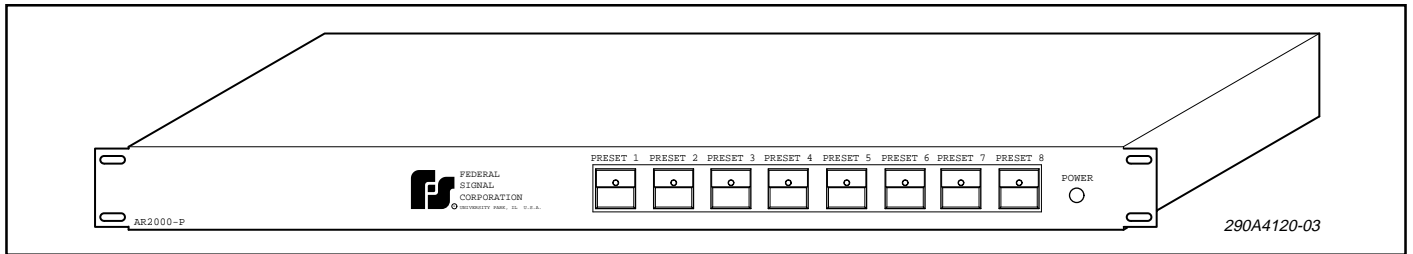


Figure 1-3.

If the correct password is entered the caller will hear the message “PRESS 9 KEY TO CHANGE THE PASSWORD OR 6 KEY TO RECORD A MESSAGE”.

If the caller presses the 9 key, the message “ENTER NEW PASSWORD” will inform the caller to enter a new password. The same new password must be entered twice. Otherwise, the caller will hear the message “PASSWORD NOT CHANGED” then the message “GOODBYE” and the system hangs up the phone line. If the new password is successfully entered twice, the caller will hear the message “PASSWORD CHANGED” then the message “GOODBYE” and the system hangs up the phone line.

If the caller presses the 6 key, the message “RECORD MESSAGE, PRESS # KEY TO BROADCAST YOUR MESSAGE” prompts the caller to start speaking. The message can be up to 90 seconds long. If the user exceeds 90 second duration, the message will not play back.

At any time during the call, the caller can enter the # key or hang-up the phone to exit. Also, when a key input is necessary, the caller has 5 seconds to enter a key or the system hangs up automatically.

The password can be returned to the default “12345678” by opening the cover of the Router and setting switch SW1 position #4 to the “ON” position for 5 seconds with the power “ON”.

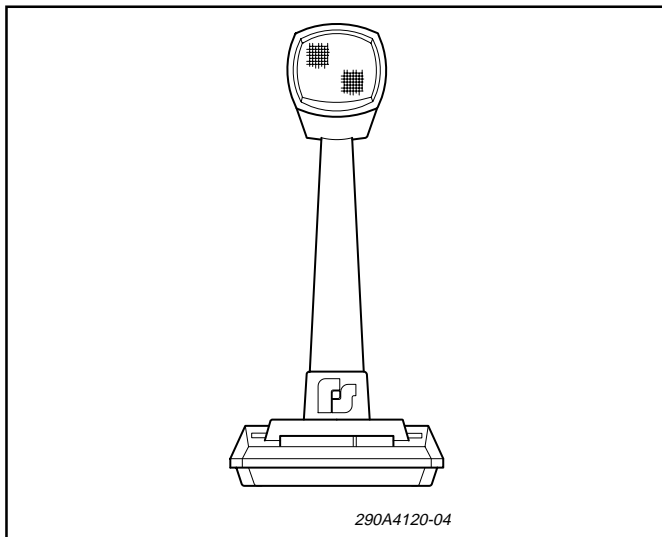


Figure 1-4.

Default is to all zones. Phone receiving is disabled during message playback; therefore, subsequent calls must wait for the current message to be completed before another recording will take place.

Preset operation

The preset optos are a combination of edge and level-tripped. If the system sees an active edge on an opto, it will set the input and output relays for the corresponding preset. The relays will remain set until the input goes away.
Setting a Preset:

To set a preset, select the zones desired for the preset by pressing and releasing the appropriate zone button. The LED corresponding to that zone will illuminate. Select the input source (Channel A or Channel B) for that preset. Press and hold the appropriate preset button until it begins to flash. The preset is now set.

To recall a preset simply select the preset by pressing and releasing the associated preset button.

1-2. CHASSIS DESCRIPTION.

The Model AR2000-M is assembled in a black, sprayed aluminum 3-piece housing approximately 17.5" wide by 14.25" deep by 3.5" high. It is intended to be rack mounted in a standard 19" rack mount cabinet.

The housing is held together with eighteen screws, eight on the front panel, six on the rear panel and four securing the top to the sides.

The main printed circuit board is attached to the lower housing with seven screws. Separate wiring harnesses connect the front and rear boards to the main printed circuit board. The front panel switches are designated as CH A, CH B, ALL CALL, CANCEL ZONE 1 through ZONE 8 and PRESET 1 through PRESET 8.

The Model AR2000-P is assembled in a black, sprayed aluminum 3-piece housing approximately 17.5" wide by 10.125" deep by 1.75" high. It is intended to be rack mounted in a standard 19" rack mount cabinet. The housing is held together with

twelve screws, four on the front panel, four on the rear panel and four securing the top to the sides. The front panel switches are designated as PRESET 1 through PRESET 8.

The Model AR2000-Z is assembled in a black, sprayed aluminum 3-piece housing approximately 17.5" wide by 10.125" deep by 1.75" high. It is intended to be rack mounted in a standard 19" rack mount cabinet. The housing is held together with twelve screws, four on the front panel, four on the rear panel and four securing the top to the sides. The front panel switches are designated as ZONE 1 through ZONE 8.

1-3. CONTROL CIRCUITRY.

A. Control Circuitry.

The control circuitry in the AR2000-M has a built-in priority level feature. The local microphone has the highest priority level when activated. If a preset is initiated by contact closure, the AR2000-M will grant that preset priority. The Audio Router will store the current selection first, then activate the preset. Once the contact closure is removed, the AR2000-M will return the system to the previous condition. Pressing cancel will deactivate any currently active selections.

B. All CALL Pushbutton.

The ALL CALL pushbutton switch selects and connects all zones to the currently selected input source. Pressing the ALL CALL again returns the system to the previous condition.

C. CANCEL Pushbutton.

The CANCEL pushbutton when pressed will reset all the manually activated signaling functions of the AR2000-M.

D. MONITOR SPKR.

A monitor speaker may be connected to the unit at this output. Audio to this output will exist during all conditions except when the microphone is in use. This prevents any feedback from the microphone.

E. ADDITIONAL ZONES.

An AR2000-Z may be connected to add on additional 8 zones of control. If desired, up to seven (7) total AR2000-Z units may be added to provide a total of 64 zones.

F. ADDITIONAL PRESETS.

An AR2000-P may be connected to add on additional 8 presets of control. If desired, up to seven (7) total AR2000-P units may be added to provide a total of 64 presets.

1-4. POWER.

WARNING

In order to prevent power to the AR2000-M from being accidentally turned off, the unit has a power switch located on the back of the unit. Before performing any installation or maintenance, ensure that power is disconnected.

The front panel has a green LED to indicate the presence of primary power. It also has a red LED to indicate the presence of secondary power in use. The AR2000-M can be operated from either a 120VAC, 240VAC or a 24VDC power source. The AC power is connected via the power cord, which requires manual switching in order to operate. 24VDC Backup connects via the rear terminals directly underneath the 4-Amp, Bussman-type GMT indicating fuse.

WARNING

If this unit is to be connected to a non-power limited 24 volt dc supply, the National Electrical Code (NFPA 70) requires that those leads be separated from other classes of wiring connected to this unit.

The AR2000-P and the AR2000-Z obtain power directly from the AR2000-M.

1-5. AUDIO INPUTS.

Channel A and Channel B inputs are provided in the back of the unit to couple standard 1 volt audio signal from a background music source such as a radio receiver, CD player or a tape player. The inputs can also be selected to accept a 25Vrms or 70Vrms input source. The Channel A input is selectable from the front panel by depressing the Channel A selection button. To select the Channel B input, depress the Channel B selection button on the front panel. Only Channel A or Channel B may be activated at one time. It is not possible to activate both Channel A and Channel B audio sources simultaneously.

1-6. MICROPHONE INPUT OPTION.

A Federal Signal Model MSB-1 microphone can be connected directly to the AR2000-M via the modular jack provided on the front of the unit (highest priority).

1-7. TELEPHONE INPUT OPTION.

A standard telephone line can be connected directly to the AR2000-M via the modular phone jack provided at the back of the unit. This allows the user to contact the AR2000-M via phone, record a message and deliver it to zones selected by the phone line user.

1-8. ELECTRICAL DETAILS.

Termination: Screw terminals for 13 AWG to 23 AWG conductors.

Voltage Range: Selectable 120 VAC or 240 VAC 50/60 Hz.

Battery backup: 24 VDC

Channel A input: Selectable to be 1 Vrms, 25 Vrms, or 70 Vrms

Channel B input: Selectable to be 1 Vrms, 25 Vrms, or 70 Vrms

Onboard Amplifier: 15 Watts maximum

Amplifier
Output Voltage: Selectable to be 1 Vrms, 25 Vrms, or 70 Vrms

Frequency range: -3dB @ 150 Hz -3dB @ 12 kHz
(no load) -6dB @ 85 Hz -6dB @ 24.8 kHz

Monitor Speaker
output: 300mW typical @ 1 kHz, 8 ohm

Maximum switching
current for each zone: 15 AMPS

II. SPECIFICATIONS.

2-1. AR2000-M POWER INPUT.

Input Voltage	120V,50-60HZ
Standby Current	350 mA
Operating Current	2 A
Power Consumption	240 Watts
Input Voltage	240V, 50-60HZ
Standby Current	160 mA
Operating Current	1 A
Power Consumption	160 Watts

2-2. EMERGENCY POWER SOURCE INPUT.

Input Voltage	24 VDC
Standby Current	650 mA
Operating Current	4 A

2-3. AUDIO INPUT.

A. Local PA (Use optional Model MSB-1 microphone)

Input Impedance	5k Ohms
Input Voltage	16 mVrms (MAX)

B. Channel A / Channel B

Input Impedance	28.87 K ohms @ 1 Vrms position 22.67 K ohms @ 25 Vrms position 22.10 K ohms @ 70 Vrms position
Input Voltage	Selectable at 1Vrms, 25Vrms or 70 Vrms

2-4. AUDIO OUTPUTS.

A. Output Impedance

Balanced Sig. line	27 Ohms
--------------------	---------

B. Output Voltage Levels no Load

Balanced Signal Line @70Volt position	70Vrms
Balanced Signal Line @25Volt position	25Vrms
Balanced Signal Line @1Volt position	1-20Vrms

2-5. REMOTE PRESET ACTIVATION CIRCUIT.

NOTE: It is recommended that the installer use shielded, twisted pair wire in order to minimize any false activation due to environmental noise.

Type	Dry Contact Closure
Line Impedance	1 K ohm (MAX)
Circuit Current	20 mA Max (12VDC)

2-6. REMOTE MIC. ACTIVATION CIRCUIT (PTT).

Type	Dry Contact Closure
Line Impedance	100 Ohm (MAX)
Circuit Current	10MA Max (12VDC)

2-7. RELAY CONTACT CLOSURE OUTPUTS.

Relays	
Type:	Dry Contact Closure
Rating:	15A maximum current per zone

2-8. FUSE.

F1	Type GMC 2A, 250V
F2	Bussman-type GMT 4A

2-9. PHYSICAL.

A. AR2000-M	
Weight	16 lb 8 oz. (7.5 kg.)
Dimensions (HWD)	3.5" x 17 3/8" x 14.25" 89mm x 442mm x 362mm
Case Material	14GA Aluminum
B. AR2000-P	
Weight 3 lb, 15 oz. (1.8 kg)	
Dimensions (HWD)	1.75" x 17 3/8" x 10.125" 44.5mm x 442mm x 257mm
Case Material	14GA Aluminum
C. AR2000-P	
Weight 3 lb, 15 oz. (1.8 kg)	
Dimensions (HWD)	1.75" x 17 3/8" x 10.125" 44.5mm x 442mm x 257mm
Case Material	14GA Aluminum

2-10. AGENCY APPROVALS.

A. UL AND cUL Certifications.

UL 813, (AZJX) Commercial Audio and Radio Equipment, Systems and accessories
C22.2 No. 1-98, (AZJX7) Audio, Video, and Similar Electronic Equipment

B. CSA Certification-Pending

C22.2 No. 1-98, Audio, Video, and Similar Electronic Equipment

C. FCC.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

III. INSTALLATION.

SAFETY MESSAGE TO INSTALLERS

Peoples lives depend on proper installation of our products. It is important to follow all instructions shipped with these products. These devices are to be installed by a qualified electrician in accordance with the National Electrical Code (NFPA 70), or other national or local codes, under the direction of the local authority having jurisdiction.

The selection of the mounting location for the device, its controls and routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this equipment.
- Do not connect this unit to the system when power is on.
- Speakers connected to this system can produce loud sounds which may cause, in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- After installation, test the Audio Router sound system to ensure proper operation.
- Show these instructions to your Safety Engineer and then file them in a safe place and refer to them when maintaining and/or reinstalling the unit.
- Establish a procedure to routinely check the sound system for proper activation and operation.
- Consult the authority having jurisdiction in your area regarding the proper use and installation of this product.

3-1. UNPACKING.

After unpacking the unit, examine it for damage that may have occurred in transit. If equipment has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

3-2. MOUNTING ARRANGEMENTS.

The AR2000-M provides four (4) holes for mounting in a standard rack. It utilizes a space of 2U.

The AR2000-P provides four (4) holes for mounting in a standard rack. It utilizes a space of 1U.

The AR2000-Z provides four (4) holes for mounting in a standard rack. It utilizes a space of 1U.

3-3. ELECTRICAL CONNECTIONS.

DANGER

To avoid electrical shock and damage to the device, do not attempt to connect wires when power is on.

Terminal blocks are supplied on the AR2000-M for field wiring. Strip 1/2" of insulation from the wiring leads. Attach the appropriate wires to the corresponding terminals. Tighten the screws to insure that the wires are firmly held in place. The terminals will accept conductor sizes 23 AWG to 13 AWG.

3-4. SIGNAL LINES.

A. The signal lines transfer the tone signals and verbal messages from the AR2000-M to the selected zones and their devices. In order to reduce the possibility of cross talk, hum and static noise pick-up, the signal lines must be twisted pair, shielded audio cable. Although the majority of systems use AWG 18 shielded twisted pair audio cables, the size of the audio cable should be adjusted to correspond to the level of audio being routed in your application.

CAUTION

If too small a wire gauge is used, unacceptable signal voltage drop in the signal line will cause reduced sound output from the remote signal device. Only use a cable having wire gauge greater than 22AWG.

B. Federal does not recommend that new or existing telephone lines be used as signal lines in an Audio Router system for the following reasons:

1. Interference from other services or systems, or interference from the system to other services.
2. Cross talk, interference or hum induced by other telephone lines.
3. Extended downtime because of the second party involvement required to service the lines.
4. The additional cost of installation, interfacing devices and monthly charges as opposed to a one-time cost of performing the installation.

3-5. MODEL AR2000-M SIGNAL CONNECTIONS.

CAUTION

Crosstalk can occur between signal lines and power lines, causing confusing messages, which interfere with the capability of this equipment.

Do not install signal lines in the same conduit with power lines. Avoid routing signal lines on cable trays with high voltage power lines.

To connect the signal lines of the system to the AR2000-M, connect a color-coded shielded twisted pair of audio cables having conductors no smaller than 18 AWG to + and - of each zone output being utilized to the appropriate remote device(s). (See figure 3-1.) Every remote signaling device in the system will be connected in parallel to these lines. When connecting the remote devices in parallel to the signal lines, observe the correct polarity and install wire nuts over the connections.

NOTE: If using the supplied amplifier or an external amplifier, the output audio must be connected using appropriate wire from AUDIO OUT to AUDIO IN FROM EXTERNAL AMP. If using the on-board amplifier, directly connect the AUDIO IN FROM EXTERNAL AMP to the AUDIO OUT terminals on the back of the AR2000-M. See section 3-4 for recommended wire sizes.

3-6. CONNECTION TO REMOTE DEVICES.

Physically install the remote device(s); follow the installation instructions packed with the device.

A. 300GC, 300GCX, 300X, 302GC, 302GCX, 302X, 50GC, and 50GCB.

To connect these models to a 25Vrms or 70Vrms signal line, a Model AM25CK or AM70CK connector card must be used. See figure 3-1 and instructions below for the appropriate signal line voltage.

B. 70 Vrms Signal Line Application.

The AR2000-M has provision for connecting 70 Vrms line operated speakers to its output. Connect the 70 Vrms line at the terminals of Zone 1 – Zone 8 terminal block(s). Connect the speakers in parallel to this line using 70 Vrms line tap. This output is selected by setting the switch on the back of the

AR2000-M to the 70 Vrms position. The output audio must be connected using 16GA wire from AUDIO OUT to AUDIO IN FROM EXTERNAL AMP. The Gain may be adjusted using the AUDIO OUT VOLUME control knob.

C. 25 Vrms Signal Line Application.

The AR2000-M has provision for connecting 25 Vrms line operated speakers to its output. Connect the 25 Vrms line at the terminals of Zone 1 – Zone 8 terminal block(s). Connect the speakers in parallel to this line using 25 Vrms line tap. This output is selected by setting the switch on the back of the AR2000-M to the 25 Vrms position. The output audio must be connected using 16GA wire from AUDIO OUT to AUDIO IN FROM EXTERNAL AMP. The Gain may be adjusted using the AUDIO OUT VOLUME control knob.

D. Low Level Audio Output.

The AR2000-M also has provision for 1 volt audio output that can be switched to each zone for individual external amplification. This low level output is available at the same terminals as in B and C above. This output is selected by setting the switch on the back of the AR2000-M to the 1 Vrms position. The output audio must also be connected using 18-20GA wire from AUDIO OUT to AUDIO IN FROM EXTERNAL AMP. The Gain may be adjusted using the AUDIO OUT VOLUME control knob. It can also be connected to an analog fiber optic transmitter so that audio can be transmitted over a fiber optic link in an electrically noisy environment.

E. External Amplifier Connection for Alternate Power Audio Output.

The AR2000-M also has provision to connect an external amplifier, such as the Federal Signal HP440, to be switched to the corresponding zones. Set the Audio Router up as listed in D above. Connect the 1 volt AUDIO OUT to the audio input of another amplifier. The output audio must be connected using appropriate wire gauge for the application to the AUDIO IN FROM EXTERNAL AMP (See figure 3-2.) The Gain may be adjusted using the AUDIO OUT VOLUME control knob.

CAUTION

Careful attention should be paid in order to make sure orientation of the signal is not reversed.

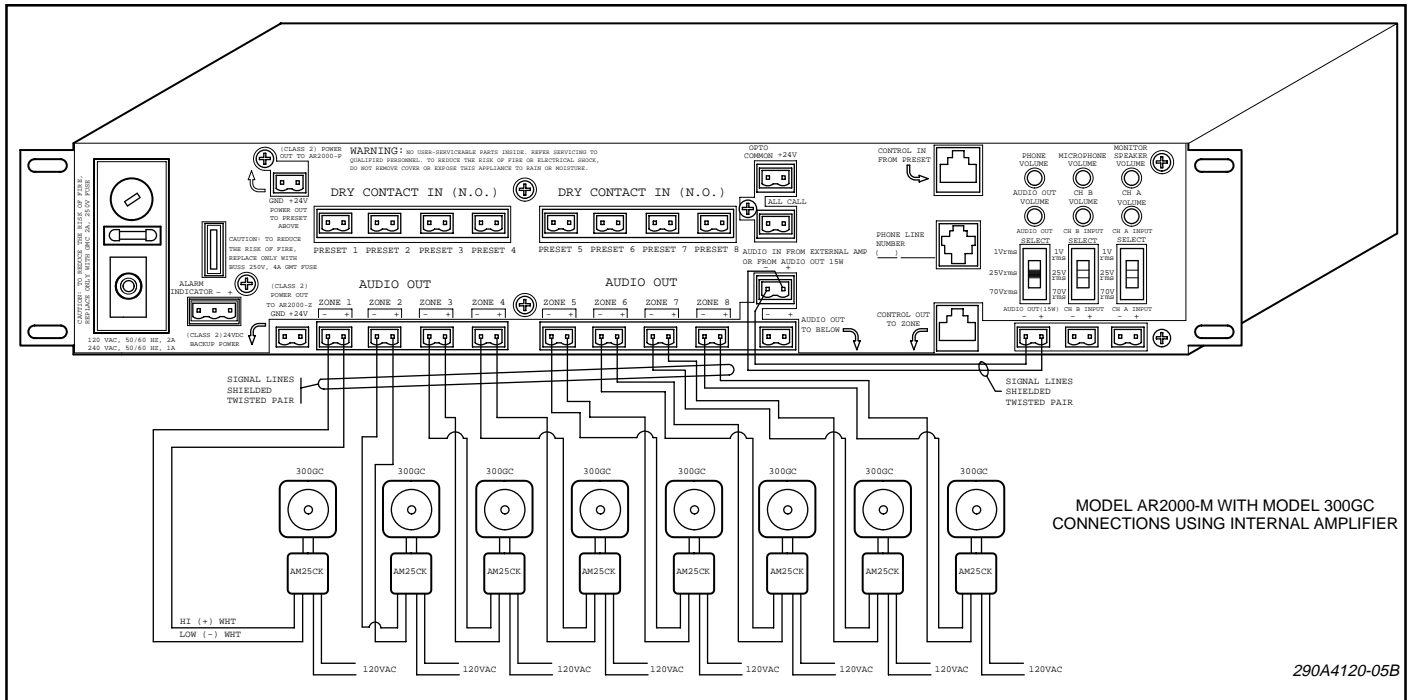


Figure 3-1.

3-7. POWER CONNECTIONS.

A. Local Power (see figure 3-3).

The two basic methods of supplying power to an Audio Router device are 120VAC 50/60Hz Local Power or 240VAC 50/60Hz Local Power and 24VDC Backup Power. The following paragraphs describe each method along with the advantages and disadvantages of each.

In this system, power is supplied to the AR2000-M device by connecting it to a 120VAC or 240VAC supply in the immediate vicinity of the device. An input selector switch is provided and must be set to the appropriate input voltage prior to turning the device on.

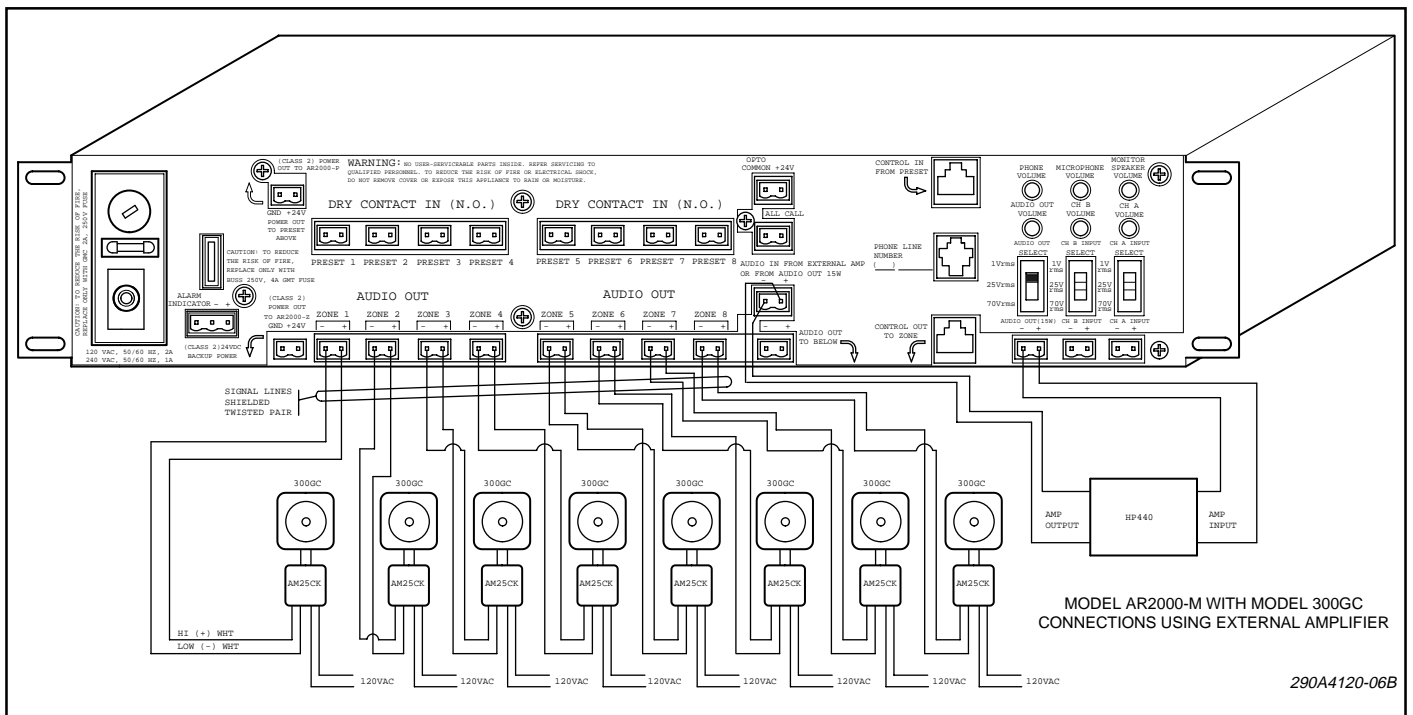


Figure 3-2.

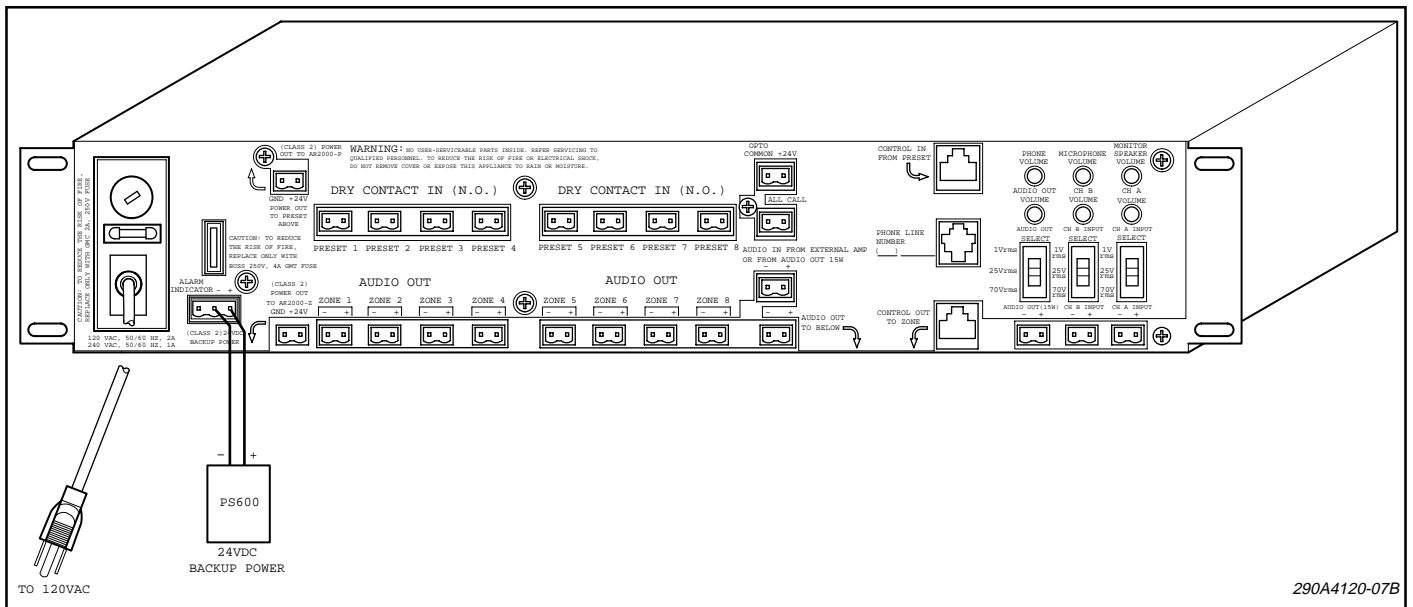


Figure 3-3.

CAUTION

Improper installation could render this system inoperable, interfering with the indicating nature of this product. The installation must conform to applicable local and/or National Electrical codes.

If an emergency power source is required, a backup power system described below should be employed.

WARNING

If the AR2000-M is to be connected to a non-power limited 24 volt dc supply, the National Electrical Code (NFPA70) requires that those leads be separated from other classes of wiring connected to this unit.

B. Backup Power (See figure 3-3).

1. General.

In the backup power system all of the local power lines are connected in parallel to one centrally located power source of 24VDC.

2. Advantages of the Backup Power System.

- a. The entire system may be independent of local line voltage.
- b. The entire system can be switched to an emergency standby power source in the event of a power failure.
- c. The central power system has the added advantage that an auxiliary power supply, such as the Federal Model PS600 can be used to

power the local Audio Router Device. If the PS600 is used, it is not necessary to switch the power source if a power failure occurs.

3. Disadvantages of Backup Power System.

- a. A separate power source for all remote devices is required. Heavy power lines are required from that power source to the remote devices in the system. The size of the power lines is dependent upon the number of amplifiers and the total distance of the power loop in order to minimize the voltage drop while a signal is being routed.
- b. Future expansion is limited by the current capacity of the power source and the power lines that were initially installed.
- c. Central power installations must comply with local electrical codes. Most power circuits are Class I circuits. Therefore, conduit will probably be required. Installation costs are higher than a local power system.

C. AR2000-M System Power Connections.

DANGER

Installation with the system power on could cause serious injury or death. Do not perform any installation or maintenance on this system when power is on. Ensure that the power is disconnected before proceeding.

WARNING

This device is to be installed by a trained electrician who is thoroughly familiar with the national electrical code (NFPA 70) and local codes and will follow the guidelines.

WARNING

If this unit is to be connected to a non-power limited 24 volt dc supply, the National Electrical Code (NFPA70) requires that those leads be separated from other classes of wiring connected to this unit.

CAUTION

Cross talk, interference, or hum can be induced in signal lines, causing poor audio output or confusing messages, which interferes with the capability of this equipment. Do not install power lines in the same conduit as signal lines.

Operating power is connected to AR2000-M by merely inserting the plug end of the line cord into any standard 120 volt, 60 Hz outlet. The AR2000-M is factory set for 120VAC 50/60Hz operation. If 240 volt operation is preferred, the input block provides a switch that must be set to this position in order to function at 240 VAC operation.

If it is desired to use 24 VDC either as a primary or auxiliary source of power, connect the “+” terminal of 24 volt DC power supply to the “+” terminal at the 24VDC BACKUP POWER terminal on the AR2000-M and “-” terminal of the 24 VDC power supply to the “-” terminal at the 24VDC BACKUP POWER terminal on the AR2000-M located in the back of the device. (See figure 3-3.)

D. AR2000-P and AR2000-Z Power Connections.

Operating power is connected to AR2000-P and AR2000-Z by merely connecting 24 VDC from the AR2000-M to each unit. A terminal block is provided at the rear-left side of each unit for power connection. Observe and maintain proper polarity when wiring the power to these units. Connect the “+” terminal of the AR2000-M to the “+” terminal of the AR2000-P at the “+” terminal located in the back of device. Connect the “-” terminal of the AR2000-M to the “-” terminal of the AR2000-P at the “-” terminal located in the back of device. An additional 24VDC power outlet is provided on each AR2000-P and AR2000-Z for daisy-chaining the power to each sub-unit. Repeat for each AR2000-P and AR2000-Z.

Setup for the AR2000-P presets is done in the same way as the AR2000-M presets. (See figure 3-4.)

Setup for the AR2000-Z zones is done in the same way as the AR2000-M. An audio input is provided on each unit to be routed to each of the zones it selects. This audio should be connected by wiring a connection from the master audio output to the provided input terminals. (See figure 3-5.) Each additional AR2000-Z should obtain audio in the same manner from the unit above. (See figure 3-5.)

3-8. CONNECTIONS TO REMOTE SWITCHES.

The AR2000-M presets can be activated remotely by any normally open low current switch contacts having a current capacity of at least 50 mA inductive. Figure 3-6 illustrates the connection of switch contacts to the AR2000-M. S1, S2, S3 and S4 represents remote switch contacts such as those found in flow switches, program clocks, heat detectors, and smoke detectors. The remotely activated presets function as long as the activating contacts remain closed. A jumper needs to be placed across OPTO COMMON and the provided +24V terminal next to it on the back of the AR2000-M in order for the remotely activated presets to function. A remote switch may be connected to the ALL CALL position if desired. These are all Normally Open contacts that initiate with contact closure and remain active until the contact is opened again.

3-9. INPUT SOURCE CONNECTIONS.

WARNING

Installation or maintenance on AR2000-M when power is on can result in serious injury or death. Do not perform any installation or maintenance to the system when power is on.

Set selector for CH A to the appropriate input voltage, 1Vrms, 25Vrms or 70Vrms. Connect the “+” of the source device to the “+” terminal at the Channel A input. Connect the “-” of the source device to the “-” terminal at the Channel A input. Repeat this process for the Channel B input. CH A and CH B volume controls are available just above each input selector to allow the input gain to be adjusted.

CAUTION

Be certain to set the input selector switch to the appropriate input voltage to avoid damage to the unit and the device being connected.

3-10. COMMUNICATION CONNECTIONS for AR2000-P and AR2000-Z.

WARNING

It is important that the communication lines be properly connected to their respective communication port. Failure to connect the cables properly will damage the devices and possibly render them inoperable.

The label on the back of each device indicates where the communication cable link should be connected. See figure 3-6 for appropriate placement.

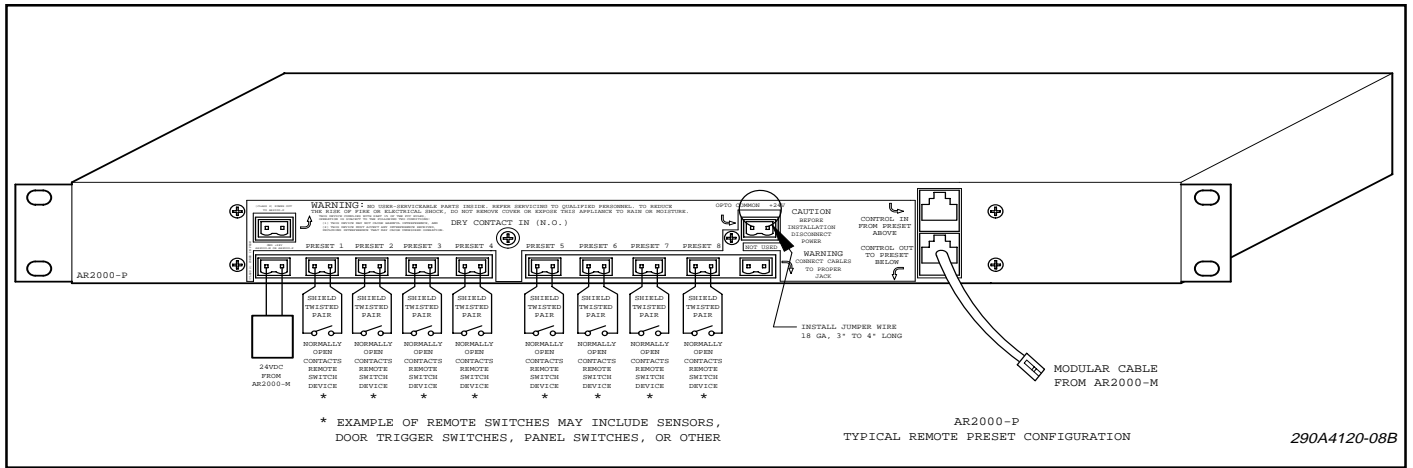


Figure 3-4.

A. Connecting a Model AR2000-Z.

Using the provided 8 position modular cable, connect the bottom communication port of the AR2000-M to the top port of the AR2000-Z. (See section 3-7 part D for an explanation of the power connection to this unit.)

B. Connecting a Model AR2000-P.

Using the provided 8-position modular cable, connect the top communication port of the AR2000-M to the bottom port of the AR2000-P. (Refer to paragraph 3-7.D. for an explanation of the power connection to this unit.)

3-11. TYPICAL CONNECTION EXAMPLES

A. Connecting a CD Player to the Audio Router.

Disconnect power from the AR2000-M.

Decide which channel will get the CD player connected to it. Using CH A as an example, set the voltage selector for the Ch A input to the 1 Vrms position. Connect the “+” input of CH A to the “+” output of the CD player. Connect the “-” input of CH A to the “-” output of the CD player. (See figure 3-7.) An input level adjust exists just above the input selector switch for each input channel. Adjust the input level as needed.

B. Connecting a 300VSC-1044-1 or 300MB to the Audio Router.

Disconnect power from the AR2000-M. Connect the output of either device to the CH B input in the same manner as detailed for the CD player. Be sure to set the input voltage selector to the appropriate voltage. (See figure 3-7.)

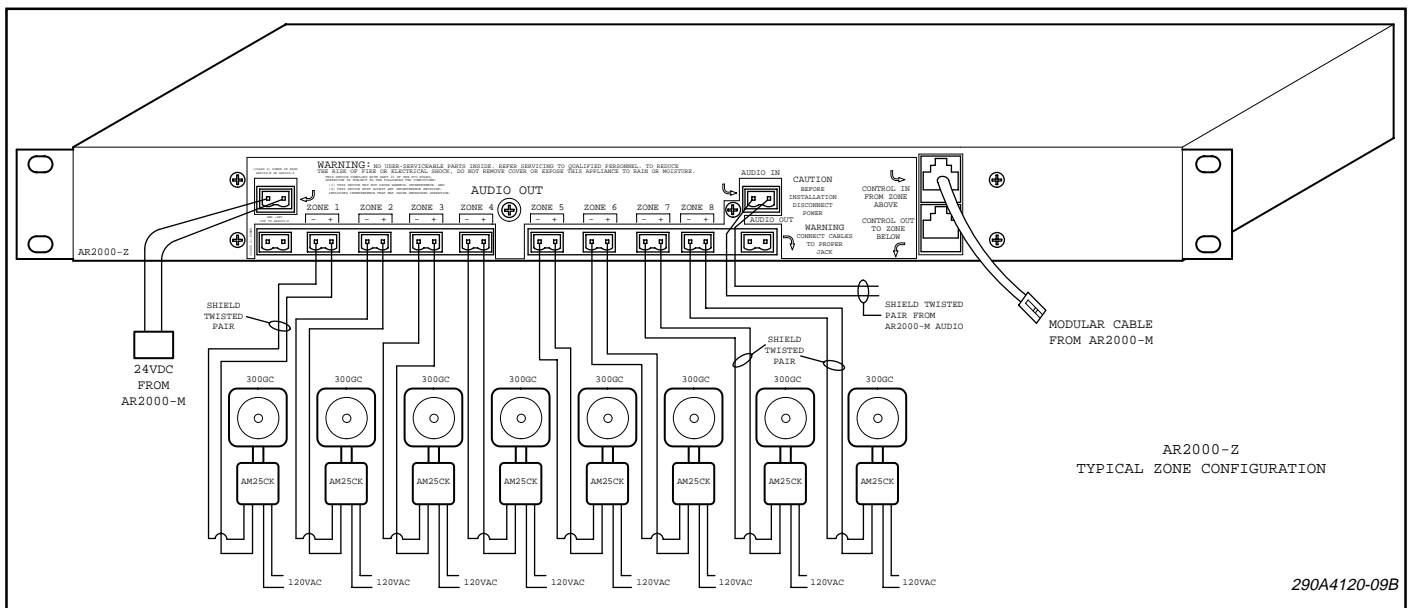
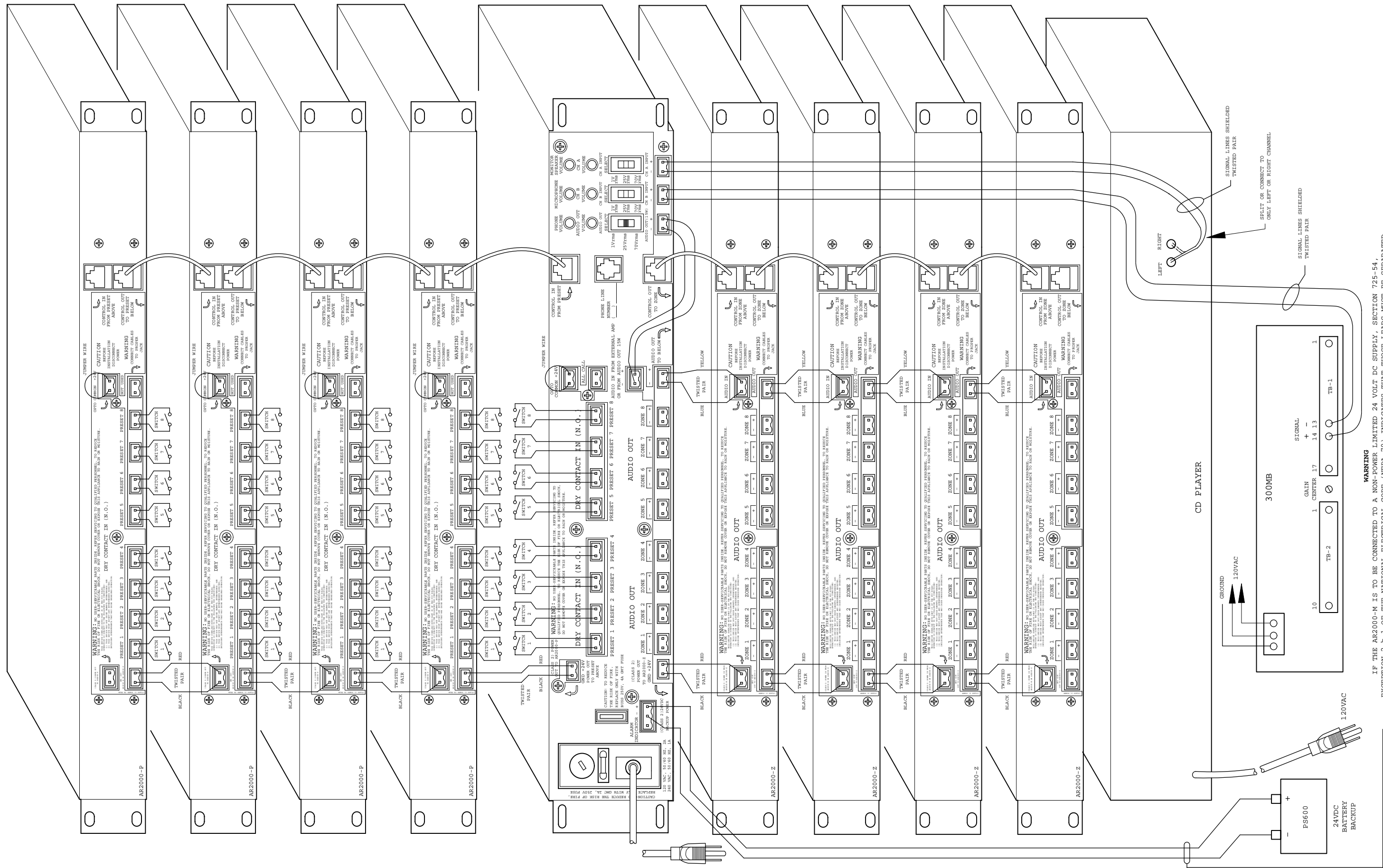


Figure 3-5.



WARNING
 IF THE AR2000-M IS TO BE CONNECTED TO A NON-POWER LIMITED 24 VOLT DC SUPPLY, SECTION 725-54, EXCEPTION 2.D.1 OF THE NATIONAL ELECTRICAL CODE (NFPA 70) INDICATES THAT THOSE LEADS MUST BE SEPARATED BY A MINIMUM OF 0.25 IN. (6.35mm) FROM ALL OTHER CONDUCTORS CONNECTED TO THIS EQUIPMENT.

Figure 3-6.

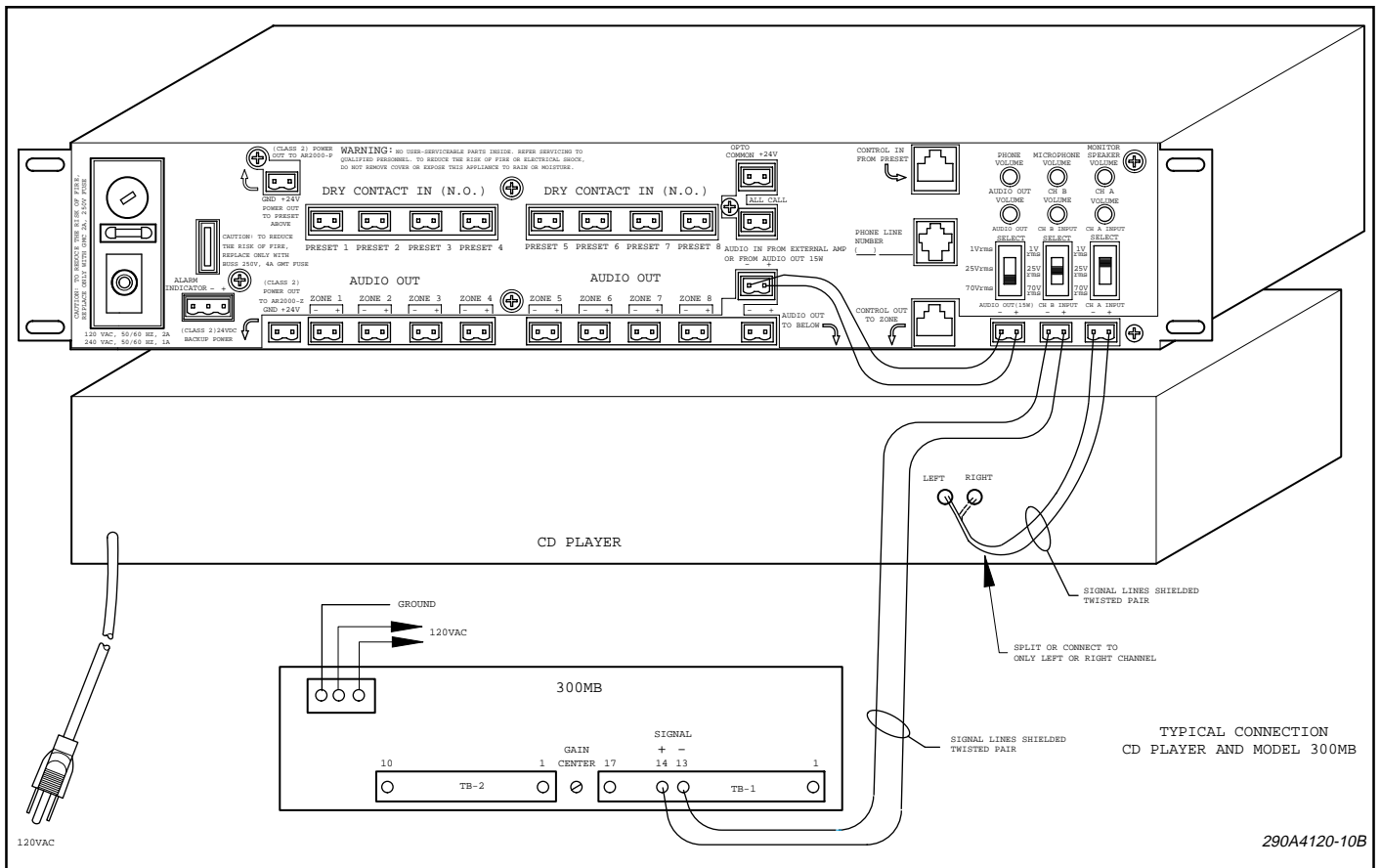


Figure 3-7.

IV. TESTING/OPERATING.

WARNING

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or possible death to you or others.

WARNING

Under certain conditions these devices are capable of transferring sound loud enough to cause hearing damage. Adequate hearing protection should be worn if standing within close proximity to the device while testing. Recommendations in OSHA Sound Level Standard (29CFR 1910) should not be exceeded.

SAFETY MESSAGE TO OPERATORS

Although your Multiplexing system is operating properly it may not be completely effective. People may not hear or heed your messages. You must recognize this fact and ensure that your messages achieve their intended effect through proper test and training sequences suitable for your specific application(s).

4-1. After completion of installation be sure to test the system to verify that each unit operates satisfactorily.

4-2. Provide a copy of these instructions for the Safety Engineer(s), System Operators(s) and Maintenance personal.

4-3. TELEPHONE FUNCTION COMMANDS.

A. Changing the Password.

When the line attached to the Router is called, the Router will answer with the message "ENTER PASSWORD". Enter your 8 digit password.

Then the caller will hear the message "PRESS 9 KEY TO CHANGE THE PASSWORD OR 6 KEY TO RECORD A MESSAGE".

Press the 9 key, the message "ENTER NEW PASSWORD" will inform the caller to enter a new password. The same new password must be entered twice. The caller will hear the message "PASSWORD CHANGED" then the message "GOODBYE" and the system hangs up the phone line.

The password can be returned to the default "12345678" by opening the cover of the Router and

setting switch SW1 to position #4 to the “ON” position for 5 seconds with the power “ON”.

B. *Recording a Message for Broadcast.*

When the line attached to the Router is called, the Router will answer with the message “ENTER PASSWORD”. Enter your 8 digit password.

Then the caller will hear the message “PRESS 9 KEY TO CHANGE THE PASSWORD OR 6 KEY TO RECORD A MESSAGE”.

Press the 6 key, the message “RECORD MESSAGE, PRESS # KEY TO BROADCAST YOUR MESSAGE” prompts the caller to start speaking. Say your message into the phone. Press [#] and hang up the phone. Your message will be sent to all zones connected to the Audio Router Device. The message can be up to 90 seconds long. If the user exceeds 90 second duration, the message will not play back. This is the procedure for selecting “All Call”.

C. *Abort a Message Without Sending it Anywhere.*

Hang up at any time without pressing [#].

D. *Send Your Message to a Specific Selected Zone or Zones.*

After saying the message, press any keys on the telephone keypad from 1-8. These correspond to the eight zones which are connected to the master AR2000-M unit. Pressing [1] will select Zone 1, pressing [5] will select Zone 5 and pressing [8] will select Zone 8.

For example: To send a message to only Zone 3 of the AR2000-M, after recording the message key in [3] and then press the [#] key. The message will be sent only to Zone 3.

For example: To send a message to Zone 3 and Zone 4 of the AR2000-M, after recording the message key in [3], key in [4] and then press the [#] key. The message will be sent to Zone 3 and to Zone 4.

If additional AR2000-Z units are connected, those Zones may also be individually selected. To accomplish this first key in [*], then key in the bank number which is associated with the additional zones you desire to reference (2 –8) and then key in a Zone for that bank. A maximum of seven (7) additional Zone Banks may be added to the AR2000-M device. The master unit is designated as Bank 1.

For example: Keying in [*], [1], [2] will select to send your message to zone 2 of Bank 1 (located in the master unit). The [*] says you are about to select a Bank number and Zone. To send the message to Bank 1 Zones 1, 4, and 6, after recording a message key in [*], [1], [1], [4], [6], [#] and hang up. The

message will be sent to Zones 1, 4 and 6 of the Master unit (Bank 1).

For example: If there is one AR2000-Z unit connected to the AR2000-M, then it is on Bank 2. To send a message to only Zone 4 of the AR2000-Z in Bank 2, key in the following after recording a message: key in [*], [2], [4], and then press the [#] key and hang up. The message will be sent only to Zone 4 of Bank 2.

For example: If there are two AR2000-Z units connected to the AR2000-M, then they are on Bank 2 and on Bank 3. To send a message to Zone 4 of the AR2000-Z in Bank 2 and Zone 5 of the AR2000-Z in Bank 3, key in the following after recording a message: key in [*], [2], [4] and key in [*], [3], [5] and then press the [#] key and hang up. The message will be sent to Zone 4 of Bank 2 and Zone 5 of Bank 3.

For example: To send a message to Zone 6 from Bank 8 after recording a message, key in [*], [8], [6] and then press the [#] key and hang up. The message will be sent to Zone 6 of Bank 8.

For example: To select Zones 1,3,5 from Bank 2 and Zones 1, 2 from Bank 3, key in the following after recording a message: key in [*], [2], [1], [3], [5], [*], [3], [1], [2], [#] and hang up. The message will be sent to Zones 1, 3 and 5 of Bank 2 and Zones 1 and 2 of Bank 3.

E. *Send Your Message to a Selected Preset.*

After recording a message, first key in [0], then the associated Bank number(1-8) and then the Preset number of that Bank (1-8). The zero indicates you are about to select a preset Bank and preset number. Only one preset may be selected for a message.

If additional AR2000-P units are connected, those Presets may also be individually selected. To accomplish this, first key in [0], then key in the Bank number which is associated with the additional Preset you desire to reference (2 –8) and then key in a Preset for that bank. A maximum of seven (7) additional Preset Banks may be added to the AR2000-M device. The master unit is designated as Bank 1.

To select preset 2 from Bank 2 after recording a message, key in [0], [2], [2] and then press the [#] key and hang up. The message will be sent to Preset 2 of Bank 2.

To select Preset 3 from Bank 8 after recording a message, key in [0], [8], [3] and then press the [#] key and hang up. The message will be sent to Preset 3 of Bank 8.

Telephone operation is essentially independent of other operations except when the device plays its recorded message. Whatever modes were active before phone operation will return when the phone message is complete. In the event that the unit is stuck in playback mode and needs to be disconnected, press and hold the "All call" button for 1 second to force a disconnect.

V. MAINTENANCE

SAFETY MESSAGE TO MAINTENANCE PERSONNEL

Failure to follow all the safety precautions and instructions may result in property damage, serious injury, or death to you or others.

- Read and understand all instructions before performing maintenance on this unit.
- Do not perform maintenance on this unit when the circuit is energized.
- Periodic checks should be made to ensure that effectiveness of this device has not been reduced.
- Any maintenance to this unit **MUST** be performed by a trained electrician in accordance with the National Electrical Code (NFPA 70) or other national or local codes.
- Never alter this unit in any manner. Safety may be jeopardized if alterations are made to this device.
- The nameplates, which may contain cautionary or other information of importance to maintenance personnel, should not be obscured by painting or anything of the like.

WARNING

Unauthorized servicing of this unit may result in diminished performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair or retro fit of parts. Refer to paragraph VI. SERVICE for instructions regarding return/repair of the unit.

VI. SERVICE.

The factory will provide technical assistance with any problem that cannot be handled locally with satisfaction. Please call customer service for assistance (708) 534-3400.

Communication and shipments should be addressed to:

Federal Signal Corporation
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL
60466-3195

MODELS AMR6-2570 AND AMR6-100
INSTALLATION INSTRUCTIONS FOR MODELS AMR6-2570
AND AMR6-100 ADJUSTABLE POWER LOUDSPEAKERS

MODELOS AMR6-2570 Y AMR6-100
INSTRUCCIONES DE INSTALACIÓN PARA PARLANTES DE
POTENCIA AJUSTABLE MODELOS AMR6-2570 Y AMR6-100

MODÈLES AMR6-2570 ET AMR6-100
INSTRUCTIONS D'INSTALLATION POUR LES MODÈLES
AMR6-2570 ET AMR6-100 DE HAUT-PARLEURS RÉGLABLES

Address all communications and shipments to:
Adressez toutes les communications et expéditions à :
Dirija toda la correspondencia y envíos a:



FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

**INSTALLATION INSTRUCTIONS FOR MODELS AMR6-2570 AND AMR6-100
ADJUSTABLE POWER LOUDSPEAKERS**



Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

 SAFETY MESSAGE TO INSTALLERS

Peoples lives depend on your safe installation of our products. It is important to follow all instructions shipped with the products. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electric Code and will follow the NEC guidelines as well as local codes.

The selection of the mounting location for the device, its controls and routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- This unit should be installed by a qualified electrician in accordance with NFPA 72, and national and local Electrical and Fire Codes, under the direction of the authority having jurisdiction.
- If the unit is not installed in a supervisory system, it must be tested at regular intervals. Refer to NFPA 72 and the local Fire Codes for this information.
- Read and understand all instructions before installing or operating this equipment.
- Do not connect this unit to the system when power is on.
- All quality speakers of this size and type are capable of producing loud sounds which may cause, in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- After installation, test the sound system to ensure proper operation.
- All quality speakers of this size and type are capable of producing loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines, which may be used regarding permissible noise exposure levels.
- Show these instructions to your Safety Engineer and then file them in a safe place and refer to them when maintaining and/or reinstalling the unit.
- Establish a procedure to routinely check the sound system for proper activation and operation.
- Consult the authority having jurisdiction in your area regarding the proper use and installation of this product.

A. GENERAL.

The Model AMR6-2570 loudspeaker is Underwriters Laboratories Listed for “Fire Protective Signaling Use” (category designations UUMW, UEAY, and UEAY7) and the Model AMR6-100 is Listed for “General Signaling Use” (category designations UEAY, and UEAY7). Both loudspeaker models are UL listed for use in return air ceiling plenum spaces.

The 25/70 volt model includes an in-line capacitor to provide the isolation necessary for supervisory use. The 25/ 70 volt model is designed to reproduce electronically generated warning tones that command rapid recognition of emergency alerting signals. In addition, both loudspeaker models can reproduce tones, full range voice communication and background music.

B. POWER ADJUSTMENT.

See figures 1 and 2. Multiple power settings are achieved via selection of transformer tabs. The unit is set at the factory to the 8-watt position. To adjust the power (volume), remove the receptacle/wire assembly for power setting and place it on the transformer tab corresponding to the desired power (see table 1). Ensure that the receptacle is fully seated on the tab.

C. SPECIFICATIONS.

The AMR6-2570 and AMR6-100 are high fidelity 6.5" 2-way speakers, incorporating a 14mm hard dome, neodymium tweeter.

Frequency response rating	110 Hz - 20,000 Hz
Maximum Supervisory Voltage	100Vdc
UL Audibility Rating	See Table 1
Audibility Ratings On Axis @ 10", 8-watt tap	
Model AMR6-2570	81 dBa, 25 volt tap, 85.0 dBa, 70 volt tap
Model AMR6-100	85.0 dBa
Weight	3 pounds
Construction	ABS Frame - UL VO, 5VA Flame Class White Powder Coated Steel Grille

D. INSTALLATION.



To avoid electrical shock, do not attempt to install wires when power is on.

1. Electrical Connections.



An uninsulated section of a single conductor must NOT be looped around a terminal and used as two separate connections. The wire must be severed to provide electrical supervision of the connection.

Use 2 x 14-18 AWG wiring for speaker models.

Strip 1/4" of insulation from all wiring leads. Attach the appropriate wires to the corresponding terminals on the back of the speaker as shown in figures 1, 2, and 3. The positive or "+" terminal is marked with a red screw head. Tighten the screws to ensure that the wires are firmly held in place.

To select the desired wattage, refer to paragraph B. and see figures 1 and 2. Move the receptacle-wire assembly to set the desired output level. See table 1.

The 25/70 volt model is factory configured for 70 Vrms operation. For 25 Vrms operation remove the supplied receptacle/wire assembly and place it on the 25V tab (see figure 1). The 100 volt model is factory configured for 100 volt operation and no user connections are required.

2. Mounting (see figure 4).

Both loudspeaker models are mounted using the R6BB back box and R6TB support bridge. These loudspeakers can easily be mounted to any surface thickness between 1/4" and 1-1/2" due to the unique adjustable "L" shaped clamps (see figure 4). Mounting of this product using the Model R6BB back box and Model R6TB support bridge into a ceiling tile is accomplished as follows:

- Remove the ceiling tile and cut a hole using the enclosed template or using the Model R6TB support bridge as a template.
- Bend up the four horseshoe tabs on the bridge (see figure 4).
- Replace the tile and push back an adjacent tile.

- d. Position the support bridge through the adjacent tile opening and secure it over the tile just cut.
- e. Place the back box onto the support bridge ensuring that the four tabs in the bridge locate into the corresponding slots on the back box (see figure 4).
- f. Using pliers, turn the top section of the four tabs 1/8 turn in either direction to secure the back box to the support bridge.
- g. Install the wiring into the back box ensuring that all applicable codes are met.
- h. Replace the adjacent tile, connect the wiring to the speaker (see figures 1 and 2), and secure the speaker using the adjustable "L" shaped clamps.

E. TESTING/OPERATING.



Under certain conditions these devices are capable of producing sounds loud enough to cause hearing damage. Adequate hearing protection should be worn if standing within close proximity to the device while testing. Recommendations in the OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.

1. After installation is complete, be sure to test the system to verify that each speaker operates satisfactorily. If it is found that the volume is too low for its location, a higher wattage tap may be selected. Carefully remove the speaker and move the receptacle to a higher wattage tap (see figures 1 and 2). Reinstall the speaker and retest.
2. After completion of initial system test, establish a program for periodic testing of this device. Refer to NFPA 72, local Fire Codes and the authority having jurisdiction for this information.
3. Provide a copy of these instructions for the Safety Engineer, system operator(s) and maintenance personnel.

SAFETY MESSAGE TO OPERATORS (Regarding the 25/70 volt model)

Even if your warning system is operating properly, it may not be completely effective. People may not see, hear or heed your warning signal. You must recognize this fact and ensure that your warning signal achieves its intended effect through proper testing/ training sequences within your specific application(s), or other appropriate actions.

F. MAINTENANCE.

If cleaning of the front face of this device is required, a mild soap solution is recommended as the cleaning agent.

NOTE

Although not advised, if painting/touch-up of the grille model's vinyl face is necessary, a vinyl-based paint is required for coverage.

SAFETY MESSAGE TO MAINTENANCE PERSONNEL

Failure to follow all safety precautions and instructions in this document may result in property damage, serious injury, or death to you or others.

- Read and understand all instructions before performing maintenance on this unit.
- Periodic checks should be made to ensure that effectiveness of this device has not been reduced because the speaker has become clogged with a foreign substance or because objects have been placed in front of the speaker.
- Any maintenance to this unit MUST be performed by a trained electrician in accordance with NEC guidelines and local codes.
- Never alter this unit in any manner.

1. Periodically check this device to verify that there are no foreign substances in, or in front of, the speaker which will reduce its effectiveness.
2. Testing should be periodically performed. Refer to NFPA 72, local Fire Codes and the authority having jurisdiction for this information.
3. In the event a volume adjustment or other repair is required, be sure to refer to the Safety Message To Maintenance Personnel before proceeding.

G. SERVICE.



Unauthorized repair/servicing of the unit may result in degradation of performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair/retrofit of parts.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair, must be accompanied by a Return Material Authorization. This R.M.A. can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

Federal Signal Corporation
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTRUCCIONES DE INSTALACIÓN PARA PARLANTES DE POTENCIA AJUSTABLE MODELOS AMR6-2570 Y AMR6-100

ADVERTENCIA

El incumplimiento de todas las instrucciones y precauciones de seguridad puede dar como resultado daño a la propiedad, lesiones graves o la muerte para usted u otros.

MENSAJE DE SEGURIDAD PARA LOS INSTALADORES

Las vidas de las personas dependen de que usted instale con seguridad nuestros productos. Es importante seguir todas las instrucciones que se envían con los productos. Este dispositivo debe ser instalado por un electricista capacitado que esté totalmente familiarizado con el Código nacional de electricidad y que cumpla tanto con las normas NEC como con los códigos locales.

La elección del sitio de montaje del dispositivo, sus controles y la ruta del cableado debe realizarse bajo la dirección del ingeniero de la instalación y del ingeniero de seguridad. Además, a continuación se detallan otras importantes instrucciones y precauciones sobre la seguridad que usted debe cumplir:

- Esta unidad debe ser instalada por un electricista calificado de acuerdo con NFPA 72, y con los Códigos locales de electricidad e incendio, bajo la dirección de la autoridad que tenga jurisdicción.
- Si la unidad no se instala en un sistema de supervisión, debe ser probada a intervalos regulares. Consulte el NFPA 72 y los Códigos locales sobre incendios por esta información.
- Lea y entienda todas las instrucciones antes de instalar o de hacer funcionar este equipo.
- No conecte esta unidad al sistema mientras la corriente está encendida.
- Todos los parlantes de calidad de este tipo y tamaño son capaces de producir sonidos fuertes que pueden causar, en ciertas situaciones, sordera permanente. Debe tomar las precauciones adecuadas como por ejemplo usar protección para los oídos.
- Luego de la instalación, pruebe el sistema de sonido para asegurar un funcionamiento adecuado.
- Todos los parlantes de calidad de este tipo y tamaño son capaces de producir sonidos fuertes que pueden causar, en ciertas situaciones, sordera permanente. El dispositivo debe instalarse lo suficientemente alejado de escuchas potenciales para limitar su exposición mientras continúa manteniendo su efectividad. El Código OSHA de regulaciones federales 1910.95 Estándar de ruido proporciona normas, que pueden usarse con referencia a los niveles permitidos de exposición al ruido.
- Muestre estas instrucciones a su ingeniero de seguridad y luego guárdelas en un lugar seguro y remítase a ellas cuando realice el mantenimiento y/o reinstale la unidad.
- Establezca un procedimiento para revisar rutinariamente la instalación del sistema de sonido para verificar su activación y funcionamiento adecuado.
- Consulte con la autoridad que tenga jurisdicción en su área con respecto al uso y la instalación adecuada de este producto.

A. GENERAL.

El altavoz modelo AMR6-2570 está certificado por Underwriters Laboratories para el "Uso en la señalización de protección contra incendio" (denominación de tipo UUMW, UEAY y UEAY7) y el modelo AMR6-100 está certificado para "Uso de señalización general" (denominación de tipo UEAY y UEAY7). Ambos modelos de altavoz están certificados por UL para uso en espacios plenos de cielorrasos de aire de retorno.

El modelo de 25/70 voltios incluye un condensador en línea para proporcionar el aislamiento necesario para uso de supervisión. El modelo de 25/70 voltios está diseñado para reproducir

tonos de advertencia generados electrónicamente que comandan un reconocimiento rápido de las señales de alerta de emergencia. Además, ambos modelos de parlantes pueden reproducir tonos, comunicación de voz de alcance total y música de fondo.

B. AJUSTE DE POTENCIA.

Ver figuras 1 y 2. A través de la selección de las lengüetas del transformador se pueden obtener múltiples valores de potencia. En la fábrica la unidad se ajusta en la posición de 8 vatios. Para ajustar la potencia (volumen), quite el ensamblaje del receptáculo/cable para ajustar la potencia y colóquelos en la lengüeta correspondiente del transformador a la potencia deseada (ver tabla 1). Asegúrese de que el receptáculo esté totalmente apoyado en la lengüeta.

C. ESPECIFICACIONES.

El AMR6-2570 y el AMR6-100 son parlantes de alta fidelidad de 2 vías de 6,5", e incorporan un altavoz de alta frecuencia de neodimio, de domo rígido de 14 mm.

Clasificación de respuesta de frecuencia	110 Hz - 20,000 Hz
Máximo voltaje de supervisión	100VCC
Capacidad de audibilidad UL	Vea la Tabla 1
Clasificaciones de audibilidad en el eje @ 10", derivación de 8 vatios	
Modelo AMR6-2570	81 dBa, derivación de 25 volt, 85.0 dBa, derivación de 70 volt
Modelo AMR6-100	85.0 dBa
Peso	3 libras
Estructura	Marco ABS - Clase UL "Flame" (llama) 5VA, VO Rejilla de acero cubierto de polvo blanco

D. INSTALACIÓN.

ADVERTENCIA

Para evitar un choque eléctrico, no intente instalar cables cuando está encendido.

1. Conexiones eléctricas.

ADVERTENCIA PARA SISTEMAS SUPERVISADOS

Una sección no aislada de un único conductor NO debe ser enlazada alrededor de un terminal y utilizada como dos conexiones separadas. El cable debe ser dividido para proporcionar supervisión eléctrica de la conexión.

Para los modelos de parlantes utilice un cableado de 2 x 12-18 AWG.

Pele 1/4" de aislamiento de todos los conductores del cableado. Conecte los alambres apropiados a los terminales correspondientes en la parte posterior del altavoz tal como se muestra en las figuras 1, 2 y 3. El terminal positivo o "+" está marcado con una cabeza roja de tornillo. Apriete los tornillos para asegurar que los alambres estén firmemente colocados en su posición.

Para seleccionar la potencia deseada, consulte el párrafo B y vea las figuras 1 y 2. Mueva el conjunto receptáculo-alambre para fijar el nivel de salida deseado. Vea la tabla 1.

El modelo de 25/70 voltios viene configurado de fábrica para un funcionamiento de 70 Vrms. Para un funcionamiento de 25 Vrms quite el ensamblaje receptáculo/cable que se proporciona y colóquelo en la pestaña de 25 voltios (vea la figura 2). El modelo de 100 voltios está configurado de fábrica para funcionar a 100 voltios y no se necesita realizar ninguna conexión por parte del usuario.

2. Montaje (ver figura 4).

Ambos modelos de parlantes se arman utilizando una caja trasera R6BB y un puente de soporte R6TB. Estos parlantes pueden ser armados fácilmente sobre una superficie de cualquier espesor entre 1/4" y 1-1/2" gracias a las exclusivas grapas ajustables en forma de "L" (ver figura

4). El armado de este producto utilizando la caja trasera modelo R6BB y el puente de apoyo modelo R6TB en una tablilla del cielorraso se logra de la siguiente forma:

- a. Quite la tablilla del cielorraso y corte un orificio utilizando la plantilla que se adjunta o el puente de apoyo modelo R6TB como plantilla.
- b. Doble hacia arriba las cuatro pestañas en herradura del puente (ver figura 4).
- c. Vuelva a colocar la tablilla y empuje hacia atrás una tablilla contigua.
- d. Coloque el puente de apoyo a través de la abertura de la tablilla contigua y asegúrelo sobre la tablilla recién cortada.
- e. Coloque la caja trasera sobre el puente de apoyo asegurándose de que las cuatro pestañas del puente queden dentro de las ranuras correspondientes en la caja trasera (ver figura 4).
- f. Utilizando pinzas, doble la sección superior de las cuatro pestañas 1/8 de vuelta en cualquier dirección para asegurar la caja trasera al puente de apoyo.
- g. Instale el cableado dentro de la caja trasera asegurándose de que se cumplan todos los códigos que correspondan.
- h. Vuelva a colocar la tablilla adyacente, conecte el cableado al altavoz (vea las figuras 1 y 2) y asegure que el altavoz esté usando las grapas ajustables en forma de “L”.

E. PRUEBA/FUNCIONAMIENTO



Bajo ciertas condiciones estos dispositivos pueden producir sonidos lo suficientemente altos para causar daños al oído. Debe usar una protección adecuada para el oído si va a estar en las cercanías al dispositivo durante la prueba. No deben excederse las recomendaciones de la norma de nivel de sonido OSHA (29 CFR 1910).

1. Después de que la instalación esté completa, asegúrese de probar el sistema para verificar que ambos altavoces funcionen satisfactoriamente. Si encuentra que el volumen es demasiado bajo para su ubicación, puede seleccionar una toma de mayor potencia. Retire cuidadosamente el altavoz y mueva el receptáculo a una toma de mayor potencia (vea las figuras 1 y 2). Instale nuevamente el altavoz y pruebe de nuevo.
2. Después de completar la prueba inicial del sistema, establezca un programa para pruebas periódicas de este dispositivo. Remítase al NFPA 72, a los Códigos locales sobre incendios y a la autoridad que tenga jurisdicción para obtener esta información.
3. Proporciónese una copia de estas instrucciones al Ingeniero de seguridad, a el/los operador(es) del sistema y al personal de mantenimiento.



Incluso si su sistema de advertencia está funcionando adecuadamente, es posible que no sea completamente efectivo. Las personas pueden no ver, oír o hacer caso de su señal de advertencia. Debe reconocer este hecho y asegurarse de que su señal de advertencia logre los efectos pretendidos a través de secuencias adecuadas de pruebas/capacitación dentro de su(s) aplicación(es) específicas, o por medio de otras acciones adecuadas.

F. MANTENIMIENTO.

Si se necesita limpiar la cara frontal de este dispositivo, se recomienda usar una solución jabonosa suave como agente de limpieza.

NOTA

Aunque no se recomienda, si es necesario pintar/retocar la cara de vinilo del modelo de rejilla, se debe utilizar una pintura vinílica para su cobertura.

MENSAJE DE SEGURIDAD PARA EL PERSONAL DE MANTENIMIENTO

El incumplimiento de todas las instrucciones y precauciones de seguridad en este documento puede dar como resultado daño a la propiedad, lesiones graves o la muerte para usted u otros.

- Lea y comprenda todas las instrucciones antes de efectuar el mantenimiento en esta unidad.
- Deben realizarse revisiones periódicas para asegurar que no se haya reducido la efectividad de este dispositivo debido a que el altavoz se haya obstruido con alguna sustancia extraña o porque se haya colocado objetos frente al altavoz.
- Todo el mantenimiento que se le realice a esta unidad DEBE ser llevado a cabo por un electricista capacitado de acuerdo con las normas NEC y los códigos locales.
- Nunca altere esta unidad en forma alguna.

1. Revise periódicamente este dispositivo para verificar que no existen sustancias extrañas dentro ni frente al parlante que puedan reducir su efectividad.

2. Se deben realizar pruebas periódicamente. Remítase al NFPA 72, a los Códigos locales sobre incendios y a la autoridad que tenga jurisdicción para obtener esta información.

3. En el caso de que se requiera un ajuste de volumen u otra reparación, asegúrese de consultar el Mensaje de seguridad para el personal de mantenimiento antes de proceder.

G. SERVICIO.

ADVERTENCIA

La reparación/servicio no autorizado de la unidad puede dar como resultado el deterioro del rendimiento y/o daño a la propiedad, lesiones serias o la muerte para usted u otros. Si se encuentra un malfuncionamiento en la unidad, no intente ningún tipo de reparación/adaptación de las piezas en el lugar.

Federal Signal llevará a cabo el servicio de su equipo o le proporcionará asistencia técnica con cualquier problema que no pueda ser manejado en forma local.

Cualquier unidad devuelta a Federal Signal para realizar un servicio, inspección o reparación debe estar acompañada por una Autorización de devolución de material (R.M.A.). Esta R.M.A. se puede obtener a través del Distribuidor local o del Representante del fabricante.

En este momento se deberá brindar una breve explicación del servicio solicitado o de la naturaleza del malfuncionamiento.

Dirija todas las comunicaciones y envíos a:

Federal Signal Corporation
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTRUCTIONS D'INSTALLATION POUR LES MODÈLES AMR6-2570 ET AMR6-100 DE HAUT-PARLEURS ÉLECTRIQUES RÉGLABLES

AVERTISSEMENT

Le non-respect de toutes les précautions de sécurité et instructions peuvent mener à des dommages à la propriété, des blessures graves ou la mort pour vous ou pour d'autres.

MESSAGE DE SÉCURITÉ POUR LES INSTALLATEURS

La vie des gens dépend de votre installation sécuritaire de nos produits. Il est important de suivre toutes les Instructions expédiées avec ces produits. Ce dispositif doit être installé par un électricien bien formé qui connaît le Code national de l'électricité et qui respecte toutes les directives du NEC ainsi que les codes locaux.

Le choix de l'emplacement de montage de ce dispositif, ses contrôles et l'acheminement du câblage doit se faire sous la direction de l'ingénieur de l'installation et l'ingénieur responsable de la sécurité. En outre, vous trouverez ci-après une liste de certaines instructions et précautions de sécurité importantes à suivre :

- Cet appareil doit être installé par un électricien qualifié conformément à la norme NFPA 72, et les codes nationaux et locaux de l'électricité et des incendies, sous la direction de l'autorité responsable.
- Si l'appareil n'est pas installé dans un système de surveillance, il doit être testé à intervalles réguliers. Reportez-vous à la norme NFPA 72 et aux codes d'incendie locaux pour cette information.
- Lisez et comprenez bien toutes les instructions avant d'installer ou de faire fonctionner cet équipement.
- Ne connectez pas cet appareil au système lorsque ce dernier est sous tension.
- Tous les haut-parleurs de qualité de cette taille et de ce type peuvent produire des sons forts qui pourraient provoquer, dans certaines situations, une perte auditive permanente. Prenez les précautions voulues comme par exemple, portez une protection auditive.
- Après l'installation, testez le système pour vous assurer qu'il fonctionne correctement.
- Tous les haut-parleurs de qualité de cette taille et de ce type peuvent produire des sons forts qui pourraient provoquer, dans certaines situations, une perte auditive permanente. L'appareil devrait être installé assez loin des auditeurs pour limiter leur exposition tout en conservant l'efficacité de l'appareil. Le code OSHA des règlements fédéraux sous la norme de bruit 1910.95 offre des indications qui pourraient servir concernant les niveaux d'intensité de bruits permisibles.
- Montrez ces instructions à votre ingénieur responsable de la sécurité, puis rangez-les dans un endroit sûr et reportez-vous à ces instructions pour l'entretien et/ou la réinstallation de l'appareil.
- Établissez une procédure de vérification de routine du système de son pour assurer une bonne activation et opération.
- Consultez l'autorité responsable dans votre région quant à la bonne utilisation et installation de ce produit.

A. GÉNÉRALITÉS.

Le haut-parleur Modèle AMR6-2570 est listé dans Underwriters Laboratories sous «Utilisation de Signal de Protection contre l'Incendie» (désignations de catégorie UUMW, UEAY, et UEAY7) et le Modèle AMR6-100 est listé sous «Utilisation de Signal Générale» (désignations de catégorie UEAY, et UEAY7). Les deux modèles de haut-parleur sont listés sous UL pour utilisation dans des espaces plénum de plafond d'air de retour.

Le modèle de 25/70 volts inclut un condensateur en ligne pour fournir l'isolation nécessaire aux fins de supervision. Le modèle de 25/ 70 volts est conçu pour reproduire les signaux d'avertissement électronique qui commandent les signaux de reconnaissance rapide d'urgence. En plus, les deux modèles de haut-parleurs peuvent reproduire des tonalités, la gamme complète de la communication vocale et la musique de fond.

B. AJUSTEMENT DE COURANT.

Voir les figures 1 et 2. Vous pouvez obtenir des réglages multiples de courant par sélection des leviers de transformateur. L'appareil est réglé en usine en position de 8 watts. Pour ajuster le courant (volume), retirez le montage prise/fil pour régler le courant et placez-le sur le levier du transformateur correspondant au courant voulu (voir le tableau 1). Assurez-vous que la prise soit bien installée sur le levier.

C. SPÉCIFICATIONS.

Les modèles AMR6-2570 et AMR6-100 sont des haut-parleurs haute fidélité de 6,5 po /16,4 cm à 2 voies incorporant un globe dur de 14 mm, haut-parleur d'aigus de néodyme.

Capacité en fréquence de réponse	110 Hz - 20,000 Hz
Tension de Supervision Maximum	100V CC
Valeur nominale d'Audibilité UL	Voir le Tableau 1
Capacités d'audibilité sur axe	
@ 10 po/25,4 cm, dérivation 8 watts	
Modèle AMR6-2570	81 dBa, dérivation 25 volts, 85.0 dBa, dérivation 70 volts
Modèle AMR6-100	85.0 dBa
Poids	3 livres/1,361 kg
Construction	Enceinte d'ABS - UL VO, catégorie d'incendie 5VA
	Grille d'acier revêtue de poudre blanche

D. INSTALLATION.

▲ AVERTISSEMENT

Pour éviter les chocs électriques, n'essayez pas d'installer les fils lorsque l'appareil est sous tension.

1. Connexions électriques.

▲ AVERTISSEMENT POUR LES SYSTÈMES SUPERVISÉS

Il NE faut PAS enrouler une section non-isolée d'un monoconducteur autour d'une borne et cela ne doit pas servir comme deux connexions distinctes. Le fil doit être coupé pour fournir la supervision électrique de la connexion.

Utilisez 2 fils 12-18 AWG pour les modèles à haut-parleurs.

Enlever 1/4" d'isolation de tous les fils conducteurs. Fixer les câbles appropriés aux bornes correspondantes à l'arrière du haut-parleur comme représenté dans les Figures 1, 2, et 3. La borne positive ou «+» est marquée par une tête de vis rouge. Serrer les vis pour s'assurer que les câbles sont correctement mis en place.

Pour sélectionner la consommation en watt, se référer au paragraphe B, et voir les Figures 1 et 2. Déplacer l'ensemble prise-câble pour régler le niveau de puissance voulu. Voir le Tableau 1.

Le modèle de 25/70 volts est configuré en usine pour une opération à 70 de tension rms. Pour un fonctionnement à 25 de tension rms, retirez l'assemblage fil/prise fourni et placez-le à l'attache de 25V (voir la figure 2). Le modèle de 100 volts est configuré pour un fonctionnement à 100 volts et aucun besoin de connexions d'utilisateur.

2. Montage (voir la figure 4).

Les deux modèles de haut-parleurs sont installés en utilisant la boîte de fond R6BB et le pont d'appui R6TB. Ces haut-parleurs s'installent facilement sur toute surface d'une épaisseur entre 1/4 po/0,635 cm et 1-1/2 po/4 cm à cause des pinces uniques réglables en forme de "L" (voir la

figure 4). Voici comment monter ce produit en utilisant la boîte de fond de modèle R6BB et le pont d'appui de modèle R6TB dans un carreau du plafond :

- a. Retirez le carreau de plafond et coupez un trou avec le gabarit fourni ou en utilisant le pont d'appui de modèle R6TB comme gabarit.
- b. Repliez vers le haut les quatre attaches en fer à cheval sur le pont (voir la figure 4).
- c. Remplacez le carreau et repoussez un carreau adjacent.
- d. Positionnez le pont d'appui par l'ouverture du carreau adjacent et fixez-le sur le carreau que vous venez de couper.
- e. Placez la boîte arrière sur le pont d'appui en vous assurant que les quatre attaches sur le pont se trouvent dans les fentes correspondantes sur la boîte arrière (voir la figure 4).
- f. Utilisez des pinces, tournez la section supérieure des quatre attaches 1/8 de tour dans l'une ou l'autre direction pour fixer la boîte arrière au pont d'appui.
- g. Installez le câblage dans la boîte arrière en vous assurant de respecter tous les codes applicables.
- h. Remettez en place le carreau adjacent, connectez les câbles au haut-parleur (voir les Figures 1 et 2), et fixez le haut-parleur au moyen des attaches en forme de «L» réglables.

E. TEST/FONCTIONNEMENT.



Dans certaines conditions, ces appareils peuvent émettre des sons suffisamment puissants pour causer un endommagement de l'ouïe. Une protection de l'ouïe adéquate doit être portée si l'on se trouve très près de l'appareil pendant les essais. Les Recommandations de la Norme de Niveau de Son OSHA (29 CFR 1910) ne doivent pas être dépassées.

1. Après l'installation, veillez à tester le système pour vérifier que chaque haut-parleur fonctionne de manière satisfaisante. Si il est constaté que le volume est trop bas pour l'emplacement, un niveau de watts plus élevé peut être sélectionné. Enlever le haut-parleur avec précautions et connecter la prise à une fiche de source de watts plus élevée (voir les Figures 1 et 2). Réinstaller le haut-parleur et retester.
2. Après avoir terminé le test initial du système établissez un programme de test à intervalles réguliers pour cet appareil. Reportez-vous à la norme NFPA 72, les codes d'incendie locaux et l'autorité ayant juridiction pour cette information.
3. Fournissez une copie de ces instructions à l'ingénieur responsable de la sécurité, l'opérateur du système et le personnel responsable de l'entretien.

MESSAGE DE SÉCURITÉ POUR LES OPÉRATEURS (concernant le modèle de 25/70 volts)

Même si votre système d'alarme fonctionne correctement, il n'est peut-être pas entièrement efficace. Les gens peuvent ne pas voir, entendre ou respecter votre signal d'alarme. Vous devez reconnaître ce fait et faire en sorte que votre signal d'alarme atteigne le but recherché en testant correctement et en établissant de bonnes séquences au sein de votre ou vos applications précises ou par toutes autres mesures.

F. ENTRETIEN.

S'il faut nettoyer l'avant de l'appareil, il est recommandé d'utiliser une solution savonneuse comme agent de nettoyage.

NOTE

Bien que cela ne soit pas recommandé, utilisez une peinture de vinyle s'il faut peindre ou retoucher la face de vinyle des modèles à grille.



MESSAGE DE SÉCURITÉ POUR LE PERSONNEL DE L'ENTRETIEN

Le non-respect de toutes les précautions de sécurité et instructions dans ce document peuvent mener à des dommages à la propriété, des blessures graves ou la mort pour vous ou pour d'autres.

- Lisez et comprenez bien toutes les instructions avant d'effectuer tout entretien de cet appareil.
- Des vérifications périodiques doivent être faites pour s'assurer que les performances de cet appareil n'ont pas été réduites du fait que le haut-parleur a été bouché par des corps étrangers ou que des objets ont été placés devant le haut-parleur.
- Tout entretien de cet appareil DOIT être effectué par un électricien formé conformément aux directives du NEC et des codes locaux.
- Ne modifiez jamais cet appareil de quelque façon que ce soit.

1. Vérifiez périodiquement cet appareil pour vous assurer qu'il n'y ait aucune matière étrangère à l'intérieur, devant, le haut-parleur qui pourrait réduire son efficacité.

2. Les tests devraient être effectués périodiquement. Reportez-vous à la norme NFPA 72, aux codes d'incendie locaux et à l'autorité responsable pour cette information.

3. S'il faut un ajustement de volume ou une autre réparation, assurez-vous de vous reporter au message de sécurité pour le personnel de l'entretien avant de poursuivre.

G. RÉPARATION.

AVERTISSEMENT

Toute réparation ou tout entretien non autorisé de l'appareil peut mener à une dégradation de la performance et/ou des dommages à la propriété, de graves blessures, ou la mort pour vous ou pour d'autres. Si l'appareil fonctionne mal, n'essayez pas de réparer ou de modifier les pièces sur le terrain.

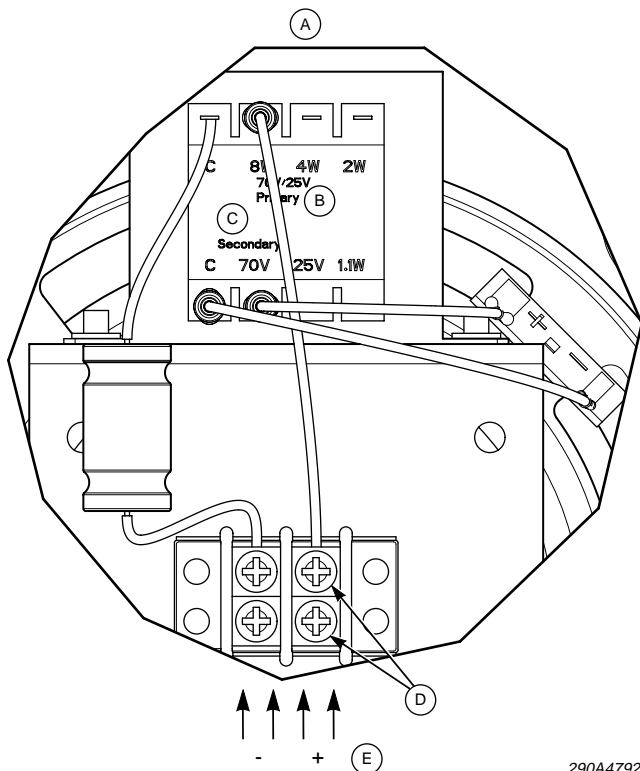
Federal Signal réparera votre équipement ou fournira une aide technique pour tout problème qui ne peut être solutionné localement.

Tous les appareils retournés à Federal Signal pour réparation, inspection ou entretien doivent être accompagnés d'une autorisation de retour du matériel. Cette autorisation s'obtient du distributeur local ou du représentant du fabricant.

Il faudrait aussi joindre une brève explication du service demandé ou la nature de la défaillance.

Adressez toutes les communications et les expéditions à :

Federal Signal Corporation
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

1

290A4792

English

- A. 25/70 Volt Model
- B. Primary
- C. Secondary
- D. Red
- E. Field Wiring Terminals (For Connection to 14-22 AWG conductors)

Note: An uninsulated section of a single conductor must NOT be looped around the terminal screw and used as two separate connections. The wire must be severed to provide electrical supervision of the field wiring connections.

Français

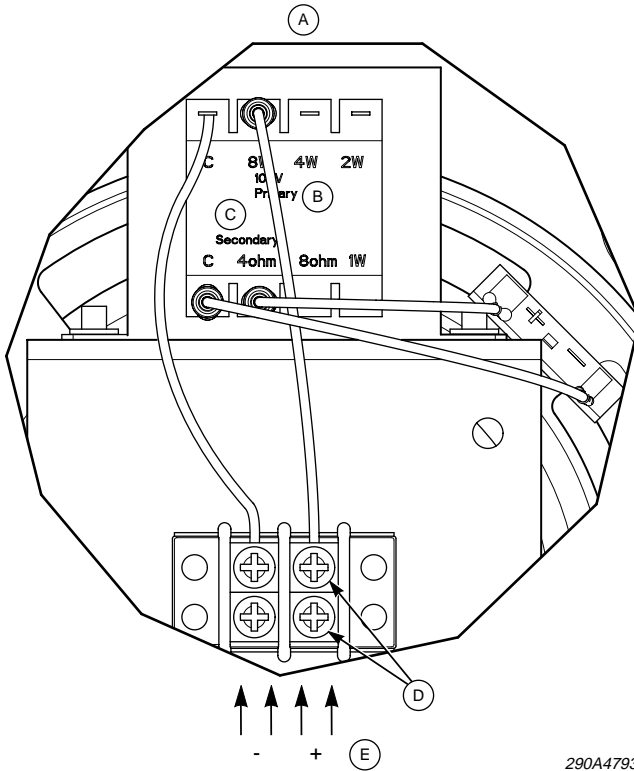
- A. Modèle 25/70 Volts
- B. Primaire
- C. Secondaire
- D. Rouge
- E. Bornes de Câblage de Champ (Pour Connexion aux conducteurs 14-22 AWG)

Remarque : Une section non isolée d'un conducteur simple ne doit PAS être enroulée autour de la vis de la borne et utilisée comme deux connexions séparées. Le câble doit être détaché pour assurer la supervision électrique des connexions de câblage de champ.

Español

- A. Modelo de 25/70 voltios
- B. Primario
- C. Secundario
- D. Rojo
- E. Terminales de cableado de campo (para conexión a conductores de 14-22 AWG)

Nota: Una sección no aislada de un único conductor NO debe ser enlazada alrededor del tornillo terminal ni ser usada como dos conexiones diferentes. El alambre debe dividirse para proporcionar supervisión eléctrica de las conexiones del cableado de campo.

2

290A4793

English

- A. 100 Volt Model
- B. Primary
- C. Secondary
- D. Red
- E. Field Wiring Terminals (For Connection to 14-22 AWG conductors)

Note: An uninsulated section of a single conductor must NOT be looped around the terminal screw and used as two separate connections. The wire must be severed to provide electrical supervision of the field wiring connections.

Español

- A. Modelo de 100 voltios
- B. Primario
- C. Secundario
- D. Rojo
- E. Terminales de cableado de campo (para conexión a conductores de 14-22 AWG)

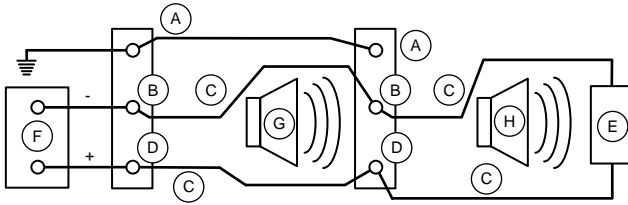
Nota: Una sección no aislada de un único conductor NO debe ser enlazada alrededor del tornillo terminal ni ser usada como dos conexiones diferentes. El alambre debe dividirse para proporcionar supervisión eléctrica de las conexiones del cableado de campo.

Français

- A. Modèle 100 Volts
- B. Primaire
- C. Secondaire
- D. Rouge
- E. Bornes de Câblage de Champ (Pour Connexion aux conducteurs 14-22 AWG)

Remarque : Une section non isolée d'un conducteur simple ne doit PAS être enroulée autour de la vis de la borne et utilisée comme deux connexions séparées. Le câble doit être détaché pour assurer la supervision électrique des connexions de câblage de champ.

3



290A4184

English

- A. Speaker Ground
- B. COM
- C. IN/OUT
- D. Input (+)
- E. EOL Device to be supplied by Listed Fire Alarm Control Panel Manufacturer.
- F. Speaker 25 or 70 VRMS Signal Source
- G. First Speaker
- H. Last Speaker

Español

- A. Tierra del parlante
- B. COM
- C. ENTRADA/SALIDA
- D. Entrada (+)
- E. Dispositivo EOL a ser suministrado por el Fabricante del panel de control de alarma de incendio listado.
- F. Fuente de la señal del parlante de 25 ó 70 VRMS
- G. Primer parlante
- H. Último parlante

Français

- A. Mise à la terre du haut-parleur
- B. COM
- C. IN/OUT
- D. Entrée (+)
- E. Dispositif EOL à fournir par le fabricant du panneau de contrôle de l'alarme d'incendie homologué.
- F. Haut-parleur de 25 ou 70 de tension RMS source du signal
- G. Premier haut-parleur
- H. Dernier haut-parleur

Table 1

Tap	UL Sound Level @ 10' dBa	
	25 Volt	70 Volt
1 Watt	71	73
2 Watt	73	75
4 Watt	74	78
8 Watt	76	81

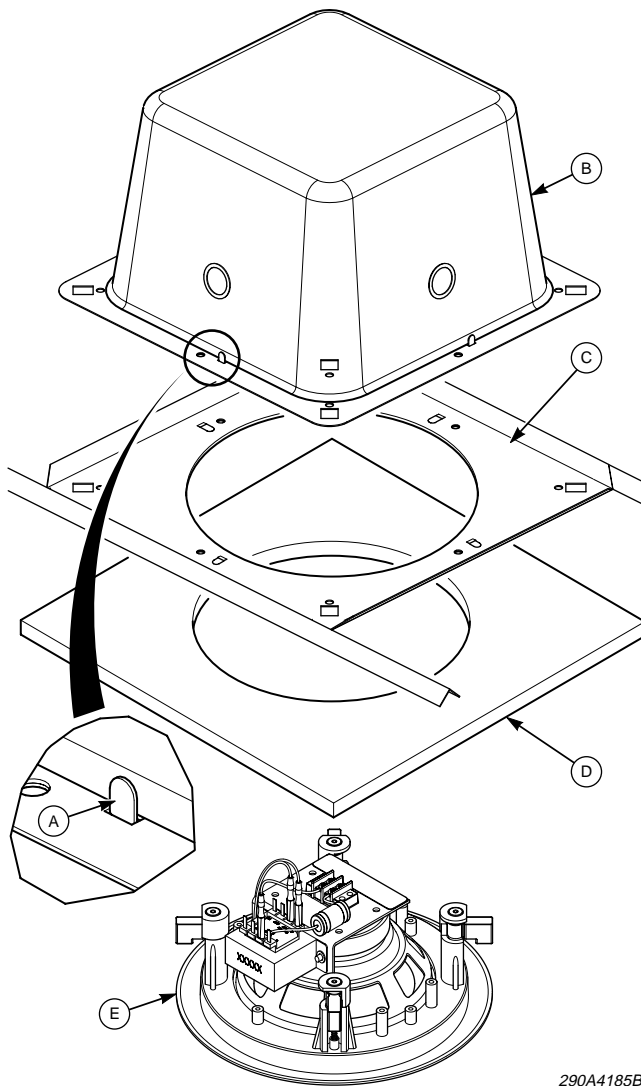
Tableau 1

Dérivation	Niveau de son UL @ 10' dBa	
	25 Volts	70 Volts
1 Watt	71	73
2 Watts	73	75
4 Watts	74	78
8 Watts	76	81

Tabla 1

Derivación	Nivel de sonido UL @ 10' dBa	
	25 Voltios	70 Voltios
1 Vatio	71	73
2 Vativos	73	75
4 Vativos	74	78
8 Vativos	76	81

4



290A4185B

English

- A. Horseshoe Tabs
- B. R6BB Back Box
- C. R6TB Support Bridge
- D. Ceiling Tile
- E. AMR6 Speaker

Español

- A. Pestañas de herradura
- B. Caja posterior R6BB
- C. Puente de soporte R6TB
- D. Tablilla del cielorraso
- E. Altavoz AMR6

Français

- A. Fiches en fer à cheval
- B. Boîte Arrière R6BB
- C. Pont de Support R6TB
- D. Carreau de Plafond
- E. Haut-parleur AMR6

MODELS AM15 and AM15XD2

**INSTALLATION INSTRUCTIONS FOR MODEL AM15 AND AM15XD2
AUDIOMASTER® SPEAKER**

MODELOS AM15 y AM15XD2

**INSTRUCCIONES DE INSTALACION PARA LOS PARLANTE
MODELOS AM15 Y AM15XD2 AUDIOMASTER®**

MODELES AM15 et AM15XD2

**INSTRUCTIONS D'INSTALLATION POUR LE HAUT-PARLEUR
AUDIOMASTER® MODELES AM15 ET AM15XD2**

Address all communications and shipments to:

Dirija todas la correspondencia y envíos a:

Adressez toutes les communiations et expéditions à:



FEDERAL SIGNAL CORPORATION

Electrical Products Division

2645 Federal Signal Drive

University Park, IL 60466-3195

INSTALLATION INSTRUCTIONS FOR MODEL AM15 AND AM15XD2 AUDIOMASTER® SPEAKER

WARNING

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

SAFETY MESSAGE TO INSTALLERS

Peoples lives depend on your safe installation of our products. It is important to follow all instructions shipped with the products. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electric Code and will follow the NEC guidelines as well as local codes.

The selection of the mounting location for the device, its controls and routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this equipment.
- This unit must be installed by a qualified electrician in accordance with NFPA 72, and National and local Electrical and Fire Codes, under the direction of the authority having jurisdiction.
- Do not connect this unit to the system when power is on.
- All effective warning speakers produce loud sounds which may cause , in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- After installation, test the sound system to ensure proper operation.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- Show these instructions to your Safety Engineer and then file them in a safe place and refer to them when maintaining and/or reinstalling the unit.
- After installation and completion of initial system test, a program of periodic testing of this device must be established. Refer to NFPA 72G, local Fire Codes and the authority having jurisdiction for this information.
- Consult the authority having jurisdiction in your area regarding the proper use and installation of this product.

I. GENERAL.

The AudioMaster Model AM15 and AM15XD2 are indoor/outdoor rated, 15 watt power output (8 ohm) loudspeakers for use with general signaling systems such as Federal Signal's FS.COMMS™ or SelectFone® systems. They are designed to reproduce full range voice communication. They are suitable for use in areas with high ambient noise levels. The speaker projector is adjustable and may be repositioned to obtain desired sound distribution.

The AM15XD2 is suitable for use in Class I, Groups A, B, C, & D, Division 2, and Class II, Groups F & G, Division 2 classified and Class III hazardous locations.

II. SPECIFICATIONS.

Operating Voltage	11 Vrms max
Power Input (selectable)	15 W max
Weight (approx.)	5 lb. (2.25kg)
Ipedance	8-ohm

Size	12-5/8" (320mm) high, 8-1/8" (206mm) wide, 8-1/4" (209mm) deep.
Construction	Aluminum enclosure painted with grey enamel. Amplifier housing sealed with neoprene rubber gasket.

III. INSTALLATION.

A. Unpacking.

After unpacking the speaker, examine it carefully for possible damage that may have occurred in transit. If equipment has been damaged, immediately file a claim with the carrier stating extent of damage. Carefully check all shipping labels and tags for special instructions before removing or destroying them.

B. Mounting Arrangements (See figure 1).

CAUTION

To maintain the hazardous location rating of the Model AM15XD2, do not use the 7/8" knockout (concealed conduit mounting).

The speaker can be mounted on any relatively flat surface. Conduit connection can be made to 1/2" threaded opening at bottom of housing or, in the case of the AM15, to 7/8" knockout in rear of housing. After the mounting location and mounting method have been selected, proceed with the applicable instructions below.

WARNING

Property damage, serious injury, or death could occur if an accumulation of water, snow, dust, etc. resides in the speaker projector, severely reducing or preventing operation of this device. Mount the unit so speaker projector is pointed horizontally or slightly downward.

1. Flat Surface Mounting.

- a. Remove and retain the two screws that secure cover to housing. Remove the cover.

WARNING

Property damage, serious injury, or death could occur if any objects are in front of speaker, severely reducing optimum sound distribution. For maximum effectiveness, ensure that the front of the speaker is clear of obstructions.

- b. Select the mounting location and place rear of housing against mounting surface.
- c. Using the mounting holes (two (2) inside the Model AM15's housing or four (4) in the AM15XD2's external mounting bracket) as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

CAUTION

Before drilling holes in any surface, ensure that both sides of surface are clear of items that could be damaged.

- d. Secure the unit to the mounting surface with #10 screws appropriate for the type of mounting surface material.

WARNING

Property damage, serious injury or death could occur if the projector is mishandled during installation or over time. DO NOT rotate the projector more than 180 degrees or internal speaker wiring may be damaged.

e. Reposition speaker projector if necessary to obtain desired sound coverage.

Loosen collar nut (see figure 1) and move projector to desired position.

f. Before reinstalling the housing cover, read paragraph III.C. Electrical Connections below and make the necessary electrical connections.

2. Model AM15 Concealed Conduit Mounting.

a. Remove and retain the two screws that secure cover to housing. Remove the cover.

b. Remove the 7/8" knockout at rear of housing.

c. Install the conduit connection.

NOTE

If installation on an existing electrical box is desired, an optional Model CC adapter plate is required.

d. Select the mounting location and place rear of housing against mounting surface.

e. Using the two (2) mounting holes as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

CAUTION

Before drilling holes in any surface, ensure that both sides of surface are clear of items that could be damaged.

f. Secure the unit to the mounting surface with #10 screws appropriate for the type of mounting surface material.

WARNING

Property damage, serious injury or death could occur if the projector is mishandled during installation or over time. DO NOT rotate the projector more than 180 degrees or internal speaker wiring may be damaged.

g. Reposition speaker projector if necessary to obtain desired sound coverage.

Loosen collar nut (see figure 1) and move projector to desired position.

h. Before reinstalling the housing cover, read paragraph III.C. Electrical Connections below and make the necessary electrical connections.

C. Electrical Connections.

DANGER

To avoid electrical shock, do not connect wires when circuits are energized.

NOTE

Audio wires should be sized properly by your licensed installation electrician for your service application. This cable requires a twisted shielded pair with an 18AWG minimum and should produce no more than 15% signal loss over the length of the cable run.

National Electrical Code as well as local codes must be adhered to in installation of these models. All electrical wiring must be routed through approved conduit and fittings. The use of metal conduit and fittings is required to provide grounding of the enclosure.

1. See figures 2 and 3. Connect the audio common (-) leads to the speaker's common terminal and audio positive (+) leads to (+) (SIG) terminal.

WARNING

Property damage, serious injury or death could occur if the housing is not closed properly. To reduce the possibility of explosion, the Model AM15XD2's housing cover must be kept tight while circuits are energized.

2. Be sure the neoprene rubber cover gasket is properly seated in the housing groove and reinstall housing cover.

IV. TESTING/OPERATING.

WARNING

Under certain conditions these devices are capable of producing sounds loud enough to cause hearing damage. Adequate hearing protection should be worn if standing within close proximity to device while testing. Recommendations in the OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.

- A. After installation is complete, be sure to test the system to verify that each speaker operates satisfactorily. If it is found that the unit is too loud for its location, adjust speaker volume level at the source.

WARNING

Property damage, serious injury or death could occur if the housing is not closed properly. To reduce the possibility of explosion, the Model AM15XD2's housing cover must be kept tight while circuits are energized.

- B. After completion of initial system test, establish a program for periodic testing of this device.
- C. Provide a copy of these instructions for the Safety Engineer, system operator(s) and maintenance personnel.

SAFETY MESSAGE TO OPERATORS

Even if your warning system is operating properly, it may not be completely effective.

People may not hear or heed your warning signal. You must recognize this fact and ensure that your warning signal achieves its intended effect through proper test/training sequences within your specific application(s).

V. MAINTENANCE.

SAFETY MESSAGE TO MAINTENANCE PERSONNEL

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

- Read and understand all instructions before performing maintenance on this unit.
- To reduce the risk of electrical shock, or ignition of hazardous atmospheres, do not perform maintenance or service on this unit when circuits are energized.
- Periodic checks should be made to ensure that effectiveness of this device has not been reduced because speaker has become clogged with a foreign substance or because objects have been placed in front of the speaker.
- Any maintenance to this unit **MUST** be performed by a trained electrician in accordance with NEC guidelines and local codes.
- Never alter this unit in any manner. Safety in hazardous locations may be jeopardized if additional openings or alterations are made to Model AM15XD2.
- The nameplates, which contain cautionary or other information of importance to maintenance personnel, should not be obscured if exterior of device is painted.

- A. Periodically check this device to verify that there are no foreign substances in, or in front of, the speaker which will reduce its effectiveness.
- B. Testing should be periodically performed. Refer to NFPA 72G, local Fire Codes and the authority having jurisdiction for information.
- C. In the event a volume adjustment or other repair is required, be sure to refer to the Safety Message For Maintenance Personnel before proceeding.

VI. SERVICE.

WARNING

Unauthorized repair/servicing of the unit may result in degradation of performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair/retrofit of parts.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair, must be accompanied by a Return Material Authorization. This R.M.A. can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTRUCCIONES DE INSTALACION PARA LOS PARLANTE MODELOS AM15 Y AM15XD2 AUDIOMASTER®

PRECAUCION

El no seguir todas las instrucciones y precauciones de seguridad puede acarrear daños a la propiedad, heridas serias e incluso su muerte o la de otros.

MENSAJE DE SEGURIDAD A LOS INSTALADORES

La vida de personas depende de la instalación segura de nuestros productos. Es importante seguir todas las instrucciones empacadas con los productos. Este dispositivo lo debe instalar un electricista calificado que esté familiarizado con el Código Nacional Eléctrico y siga las normas así como los códigos locales.

La selección del sitio de montaje del dispositivo, sus controles y la ruta del alambrado, se hará bajo la dirección del Ingeniero de las facilidades y del Ingeniero de seguridad. Sin embargo, a continuación se listan algunas otras instrucciones y precauciones de seguridad que se deben seguir:

- Lea y comprenda todas las instrucciones antes de instalar u operar este equipo.
- Esta unidad debe ser instalada por un electricista calificado de acuerdo con el NFPA 72 y los códigos eléctricos y de incendio Nacionales y locales, bajo la dirección de la autoridad competente.
- No conecte esta unidad al sistema si está encendido.
- Todos los parlantes efectivos de prevención producen sonidos fuertes, que pueden causar en ciertas ocasiones, pérdida permanente del oído y se deben tomar las debidas precauciones tales como usar protectores auditivos.
- Después de instalado, asegúrese de que el sistema de sonido ofrece una operación apropiada.
- Todos los parlantes efectivos de prevención producen sonidos tan fuertes que pueden causar pérdida permanente del oído. El aparato debe ser instalado lo bastante lejos de los oyentes potenciales para limitar su exposición mientras mantenga su efectividad. El código OSHA 1910.95 (EEUU) de regulación Federal del ruido, da las guías que deben usarse para los niveles de exposición permisible al ruido.
- Enseñe estas instrucciones a su Ingeniero de Seguridad y después archívelas en un lugar seguro y consúltelas cuando le haga mantenimiento o reinstale la unidad.
- Después de la instalación y prueba inicial del sistema, programe pruebas periódicas de este aparato. Diríjase al NFPA 72G, los Códigos locales de incendio y la autoridad competente para obtener esta información.
- Consulte con la autoridad competente en su área, lo correspondiente al correcto uso e instalación de este producto.

I. GENERAL.

Los modelos AM15 y AM15XD2 de AudioMaster están clasificados para uso externo/interno. Tienen parlantes de 15 vatios de potencia de salida (8 ohmios) para utilizar con los sistemas de señalización generales como los sistemas SelectFone® o FS.COMMST™ de Federal Signal. Éstos están diseñados para reproducir comunicación de voz de alcance completo. Son adecuados para utilizar en áreas con niveles altos de ruido ambiental. El proyector del parlante se ajusta y se puede cambiar de posición para obtener la distribución de sonido deseada.

El AM15XD2 es adecuado para utilizar en sitios Clase 1, Grupos A, B, C, y D, División 2, Clase II, Grupos F y G, División 2 clasificados y Clase III peligrosos.

II. ESPECIFICACIONES.

Voltaje de funcionamiento	11 voltios eficaces máx.
Potencia máxima aplicable	15 vatios máx.
Peso (aproximado)	5 libras (2,25 kg)

Impedancia	8 ohmios
Tamaño	302mm (alto), 206mm (ancho), 209mm (largo)
Construcción	Caja en aluminio pintada con esmalte gris. Caja del amplificador sellada con un empaque de neopreno.

III. INSTALACION.

A. Desempaque.

Después de desempacar la unidad, examine cuidadosamente si hay daños de transporte.

Si hubo daños, haga de inmediato un reclamo al transportador, estableciendo el monto del daño. Revise cuidadosamente todos los sellos de embarque y marquillas por instrucciones especiales antes de removerlos o destruirlos.

B. Arreglos de montaje (Ver figura 1).

PREVENCION

Para mantener la clasificación de seguridad en áreas peligrosas del Modelo AM15XD2, no use el disco removible de 7/8" (montaje en conduit embebido).

El parlante puede ser montado en una superficie relativamente plana. Las conexiones de conduit pueden ser de rosca de 1/2" con entrada en la parte baja de la caja. También el Modelo AM15 puede ser montado por un disco removible al fondo de la caja. Después de que la localización de montaje y el método de montaje ha sido seleccionado, proceda con las instrucciones que se listan a continuación.

PRECAUCION

Daños a la propiedad, heridas serias o la muerte podrían ocurrir si se presenta una acumulación de agua, nieve , polvo, etc en el parlante, lo que reduce severamente o evita la operación del dispositivo.

Manatenga el parlante en posición horizontal o con una ligera inclinación hacia abajo.

1. Montaje en Superficie Plana.

- a. Afloje los 2 tornillos que aseguran la tapa de la caja. Retire la tapa.

PRECAUCION

Daños a la propiedad, heridos graves o incluso su muerte o la de otros puede ocurrir si cualquier objeto está en frente del parlante, reduciendo severamente la distribución óptima del sonido.

Para mayor efectividad, asegúrese de que el frente del parlante esté despejado de cualquier obstáculo.

- b. Seleccione la localización de montaje y coloque la parte posterior de la caja contra la superficie de montaje.
- c. Usando los huecos de montaje (dos dentro de la caja del Modelo AM15 o 4 en el soporte de montaje del Modelo AM15XD2) como una plantilla, marque los puntos a perforar en la superficie de montaje. Vea la figura 1 para localización y dimensión de los huecos de montaje.

PREVENCION

Antes de perforar los huecos en cualquier superficie, asegúrese de que ambos lados de la superficie están despejados de cualquier cosa que puede dañarse.

- d. Asegure la unidad a la superficie de montaje con tornillos #10 apropiados para el tipo de material de la superficie de montaje.

PRECAUCION

Daños a la propiedad, heridas serias e incluso la muerte pueden ocurrir si el parlante es mal manejado durante la instalación o con el tiempo. NO rote el parlante más de 180° o el cableado interno del parlante sufrirá daños.

- e. Reposicione el parlante, si es necesario, para obtener la cobertura de sonido deseada. Afloje la tuerca (ver figura 1) y mueva el proyector a la posición deseada.
- f. Antes de reinstalar la tapa a la caja, lea el párrafo III. C las Conexiones Eléctricas que se listan abajo y haga todas las conexiones eléctricas necesarias.

2. Montaje en Conduit Embebido del Modelo AM15.

- a. Retire y conserve los dos tornillos que aseguran la tapa a la caja. Retire la tapa.
- b. Retire el disco variable de 7/8" de la parte posterior de la caja.
- c. Instale la conexión del conduit.

NOTA

Si se desea una instalación en una caja eléctrica ya existente, se requiere una plato adaptador opcional Modelo CC.

- d. Seleccione la localización de montaje y coloque la parte posterior de la caja contra la superficie de montaje.
- e. Use los dos huecos de montaje como una platina, marque los puntos a perforar en la superficie de montaje. Vea la figura 1 para las dimensiones y localización de los huecos de montaje.

PRECAUCION

Antes de perforar los huecos en cualquier superficie, asegúrese de que ambos lados de la superficie están libres de cosas que se puedan dañar.

- f. Asegure la unidad a la superficie de montaje con tornillos #10 apropiados para el tipo de material de la superficie de montaje.

PREVENCION

Daños a la propiedad, heridas serias e incluso su muerte o la de otros pueden ocurrir si el proyector no se maneja adecuadamente durante la instalación o cualquier tiempo después. NO rote el proyector más de 180° o el cableado interno del parlante puede sufrir daños.

- g. Reposicione el proyector si es necesario para obtener la cobertura de sonido deseada. Afloje la tuerca (ver figura 1) y mueva el proyector a la posición deseada.
- h. Antes de reinstalar la tapa de la caja, lea el párrafo III.C, las conexiones eléctricas que se listan abajo y haga todas las conexiones eléctricas necesarias.

C. Conexiones Eléctricas.

PELIGRO

Para evitar descargas eléctricas, no conecte cables cuando los circuitos estén energizados.

NOTA

Los cables de audio deben tener el tamaño correcto seleccionado por un electricista instalador autorizado para su aplicación de servicio. Este cable requiere un par trenzado blindado con un cable calibre 18AWG como mínimo y debe producir menos de 15% de pérdida de señal a lo largo del tramo del cable.

Durante la instalación de estos modelos, deben seguirse los Códigos Eléctricos Nacionales así como los locales. Todo el cableado debe hacerse a través de conduit y accesorios aprobados. Estos sería de metal si van a servir como tierra de la caja.

1. Vea las figuras 2 y 3. Conecte los conductores comunes (-) de audio al terminal común del altavoz y los conductores positivos (+) de audio al terminal (+) (SIG).

PREVENCION

Daños a la propiedad, heridas serias e incluso su muerte o la de otros puede ocurrir, si la caja no se cierra adecuadamente. Para reducir la posibilidad de explosión, la tapa de la caja del Modelo AM15XD2 se debe mantener bien cerrado mientras los circuitos estén energizados.

2. Asegúrese de que el empaque de neopreno de la caja está bien colocado en la ranura de la caja y reinstale la tapa de la caja.

IV. PRUEBA/OPERACION.

PRECAUCION

Bajo ciertas condiciones estos dispositivos son capaces de producir sonidos suficientemente fuertes como para causar daños auditivos. Se debe usar adecuada protección auditiva si se va a premanecer dentro de cierta proximidad al dispositivo cuando se está probando. Las recomendaciones de la OSHA (EEUU) con respeto a los Niveles Estándares de Ruido (29CFR 1910) no se deben exceder.

- A. Al terminar la instalación asegúrese de probar el sistema para verificar que cada altavoz funcione en forma satisfactoria. Si se determina que la unidad tiene un volumen demasiado alto para el lugar donde está ubicada, ajuste el nivel de volumen del altavoz en la fuente.

PRECAUCION

Daños a la propiedad, heridas serias o incluso su muerte o la de otros puede ocurrir si la caja no se cierra adecuadamente. Para reducir la posibilidad de explosión, la tapa de la caja del Modelo AM15XD2 se debe mantener bien cerrado mientras los circuitos están energizados.

- B. Después de terminar la prueba inicial del sistema, establezca un programa periódico de prueba de este dispositivo
- C. Provea una copia de estas instrucciones al Ingeniero de Seguridad, los operadores del sistema y el personal de mantenimiento.

MENSAJE DE SEGURIDAD A LOS OPERADORES

Aún si su sistema está operando adecuadamente, el puede no ser completamente efectivo.

La gente puede no oír o atender su señal de alarma. Usted debe detectar este hecho y asegurarse de que la señal de alarma alcance el efecto deseado por pruebas o simulacros apropiados dentro de su aplicación específica.

V. MANTENIMIENTO.

MENSAJE DE SEGURIDAD PARA EL PERSONAL DE MANTENIMIENTO

El no seguir todas las precauciones e instrucciones que se listan a continuación, puede resultar en daños a la propiedad, heridas serias e incluso su muerte o la de otros .

- Lea y comprenda todas las instrucciones antes de operar este equipo.
- Para reducir el riesgo de descarga eléctrica, o ignición de atmósferas peligrosas, no realice mantenimiento a esta unidad cuando los circuitos estén energizados.
- Se deben realizar pruebas periódicas para asegurar que la efectividad de este dispositivo no se ha reducido por que el parlante se bloquea con sustancias extrañas o hay objetos extraños delante del parlante.
- Cualquier mantenimiento a la unidad TIENE que ser hecho por un electricista entrenado de acuerdo con el NEC y los códigos locales.
- Nunca altere la unidad de manera alguna. La seguridad en sitios de alto riesgo puede ponerse en peligro si se adicionan agujeros o se hacen alteraciones al Modelo AM15XD2.
- La placa, que puede tener información de importancia o precauciones para el personal de mantenimiento, no se deba cubrir con pintura si la carcasa exterior se pinta.

- A. Periódicamente revise este dispositivo para verificar que no hay sustancias extrañas dentro, o en frente, del parlante lo que reduce su efectividad.
- B. Se debe realizar una prueba periódica. Lea NFPA 72G, códigos locales de incendios o autoridad competente para suministrar esta información.
- C. En el evento de que se requiera un ajuste de volumen, o una reparación, antes de proceder diríjase al Mensaje de Seguridad para el Personal de Mantenimiento.

VI. SERVICIO.

PRECAUCION

Reparación o servicio no autorizado de la unidad puede resultar en degradación del desempeño y/o daños a la propiedad, heridas graves e incluso su muerte o la de otros. Si se encuentra un mal funcionamiento de la unidad, no intente ninguna reparación en el sitio/o reutilizar partes usadas.

La Federal Signal Corporation le hará servicio a su equipo o proveerá asistencia técnica a los problemas que no se puedan manejar localmente.

Cualquier unidad que se devuelva a Federal Signal para servicio, inspección o reparación, debe acompañarse de una autorización de “material devuelto” (R.M.A.). Esta R.M.A. se puede obtener con el representante o distribuidor local del fabricante y se adjuntará una breve explicación de la necesidad del servicio o la naturaleza del mal funcionamiento.

Dirija todas las comunicaciones y envíos a:

FEDERAL SIGNAL CORPORATION

Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTRUCTIONS D'INSTALLATION POUR LE HAUT-PARLEUR AUDIOMASTER® MODELES AM15 ET AM15XD2

AVERTISSEMENT

Le non-respect de toutes les précautions et instructions de sécurité peut résulter en dommages aux biens, en blessures graves ou mortelles pour vous ou d'autres.

MESSAGE DE SECURITE AUX INSTALLATEURS

Ces vies humaines dépendent de votre installation de nos produits en sécurité. Il est important de lire, comprendre et suivre toutes les instructions expédiées avec ce produit. Ce dispositif doit être installé par un électricien professionnel qui est complètement au courant du Code Electrique National et respectera les recommandations NEC ainsi que les codes locaux.

Le choix de l'endroit de montage du dispositif, de ses commandes et du passage des câbles doit être effectué sous la direction de l'ingénieur des services électriques et de l'ingénieur de sécurité. De plus, sont énumérées ci-dessous quelques autres instructions et précautions de sécurité importantes que vous devez suivre:

- Lire et comprendre toutes les instructions avant d'installer ou d'utiliser ce matériel.
- Cet appareil doit être installé par un électricien professionnel conformément à NFPA 72, et aux codes électriques et incendie nationaux et locaux, sous la direction de l'autorité qui a la juridiction.
- Ne connectez pas cette unité au système si la tension est présente.
- Tous les haut-parleurs effectifs d'avertissement produisent des sons puissants qui peuvent causer dans certaines situations une perte permanente de l'ouïe. Vous devez prendre des précautions appropriées comme le port de protection de l'ouïe.
- Après installation, essayez le système de signalisation d'urgence pour vérifier que son fonctionnement est correct.
- Tous les haut-parleurs d'avertissement effectifs produisent des sons forts qui peuvent causer dans certaines situations la perte de l'ouïe. Le dispositif doit être installé suffisamment loin des auditeurs potentiels pour limiter leur exposition tout en maintenant son efficacité. Le code OSHA de Federal Regulations 1910.95 (Norme de bruit) donne des recommandations qui peuvent être utilisées concernant les niveaux d'exposition au bruit permis.
- Montrez ces instructions à votre ingénieur de sécurité puis classez-les dans un endroit sûr et référez-vous à elles lorsque vous entretenez ou réinstallez l'appareil.
- Après installation et fin du test initial du système, un programme d'essai périodique de ce dispositif doit être établi. Référez-vous à NFPA 72G, codes locaux d'incendie et à l'administration qui a la juridiction pour ces informations.
- Consultez l'administration qui a la juridiction dans votre zone concernant l'utilisation et l'installation correctes de ce produit.

I. GÉNÉRALITÉS

Les modèles AudioMaster AM15 et AM15XD2 sont d'une capacité nominale convenant pour l'intérieur et l'extérieur, les haut-parleurs d'une sortie de courant de 15 watts (8 ohms) à utiliser avec les systèmes généraux d'appel tels que les systèmes SelectFunc® et FS.COMMS™ de Federal Signal. Ils sont conçus pour reproduire la gamme complète de communication vocale. Ils conviennent pour les endroits aux niveaux élevés de bruits ambiants. Le projecteur de haut-parleur s'ajuste et peut être remplacé pour obtenir la diffusion de son désirée.

Le modèle AM15XD2 convient pour les endroits dangereux de Classe I, groupes A, B, C, et D, division 2 et de classe II, groupes F et G, division 2 classifiée et de Classe III..

II. SPECIFICATIONS.

Tension de fonctionnement	11 Vrms max.
Puissance consommée	15 W max.
Poids (approx.)	5 lb (2,25 kg)
Impédance	8 ohms
Dimensions	12-5/8" (320 mm) de hauteur x 8-1/8" (206 mm) de largeur x 8-1/4" (209 mm) de profondeur.
Construction	Enceinte en aluminium peint en émail gris. Carter d'amplificateur scellé avec joint caoutchouc néoprène.

III. INSTALLATION.

A. Déballage.

Après déballage du haut-parleur, inspectez-le pour voir s'il a été endommagé pendant le transport. S'il a été endommagé, faites une déclaration immédiatement auprès du transporteur en indiquant les dommages. Vérifiez soigneusement toutes les enveloppes, les étiquettes d'expédition et les étiquettes volantes avant de les retirer ou les détruire.

B. Dispositions de Montage (Voir figure 1).

ATTENTION

Pour maintenir la classification pour endroits dangereux du modèle AM15XD2, n'utilisez pas le trou à déboucher de 7/8" (montage à conduit caché).

Le haut-parleur peut être monté sur toute surface relativement plate. La connexion conduit peut être faite avec l'ouverture taraudée de 1/2" en bas du carter ou dans le cas du AM15, à la pièce chassée de 7/8" à l'arrière du carter. Après sélection de l'emplacement de montage et de la méthode de montage, procédez avec les instructions applicables ci-dessous.

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si une accumulation d'eau, de neige, de poussières, etc. se trouvent dans le cornet du haut-parleur, réduisant gravement ou empêchant le fonctionnement de ce dispositif. Montez l'unité de manière que le cornet du haut-parleur soit dirigé horizontalement ou légèrement vers le bas.

1. Montage sur Surface Plane.

- Retirez et gardez les deux vis qui fixent le couvercle sur le carter. Retirez le carter.

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si des objets se trouvent devant le haut-parleur réduisant gravement la répartition optimale de son. Pour une efficacité maximale, assurez-vous que l'avant du haut-parleur est dégagé de toute obstruction.

- Sélectionnez l'emplacement de montage et placez l'arrière du carter contre la surface de montage.
- A l'aide des trous de montage (2) à l'intérieur du carter du Modèle AM15 ou quatre (4) dans le support de montage externe du AM15XD2 comme gabarit, marquez les positions de perçage sur la surface de montage. Voir figure 1 pour les emplacements des trous de montage et les dimensions.

ATTENTION

Avant de percer des trous dans une surface, assurez-vous que les deux côtés de la surface sont dégagés de tout élément qui pourrait être endommagé.

- d. Fixez l'appareil à la surface de montage avec les 10 vis appropriées pour le type de matière de la surface de montage.

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si le cornet est malmené pendant l'installation ou plus tard. Ne faites pas tourner le cornet de plus de 180°, sinon le câblage intérieur du haut-parleur peut être endommagé.

- e. Repositionnez le cornet du haut-parleur si nécessaire pour obtenir la couverture sonore désirée. Desserrez l'écrou à embase (voir figure 1) et déplacez le cornet jusqu'à la position désirée.
- f. Avant de réinstaller le couvercle du carter, lisez le paragraphe III.C Connexions électriques ci-dessous et faites les connexions électriques nécessaires.

2. Montage sur Conduit Caché Modèle AM15.

- a. Retirez et gardez les deux vis qui fixent le couvercle au carter. Démontez le carter.
- b. Enlever la pièce chassée 7/8" à l'arrière du carter.
- c. Installez la connexion du conduit.

NOTE

Si l'installation sur un boîtier électrique existant est désirée, une plaque adaptateur Modèle CC, en option, est nécessaire.

- d. Sélectionnez l'endroit de montage et placez l'arrière du carter contre la surface du montage.
- e. A l'aide des deux trous de montage comme gabarit, marquez des positions de perçage sur la surface de montage. Voir la figure 1 pour les emplacements des trous de montage et les dimensions.

ATTENTION

Avant de percer des trous dans une surface, assurez-vous que les deux côtés de la surface sont dégagés de tout élément qui pourrait être endommagé.

- f. Fixez l'appareil à la surface de montage avec les 10 vis appropriées pour le type de matière de la surface de montage.

WARNING

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si le cornet est malmené pendant l'installation ou plus tard. Ne faites pas tourner le cornet de plus de 180°, sinon le câblage intérieur du haut-parleur peut être endommagé.

- g. Repositionnez le cornet du haut-parleur si nécessaire pour obtenir la couverture sonore désirée. Desserrez l'écrou à collerette (voir figure 1) et déplacez le cornet jusqu'à la position désirée.
- h. Avant de réinstaller le couvercle du carter, lisez le paragraphe III.C Connexions électriques ci-dessous et faites les connexions électriques nécessaires.

C. Connexions Electriques.

DANGER

Pour éviter des chocs électriques, ne connectez pas les fils si les circuits sont sous tension.

NOTE

Les fils audio doivent être choisis par votre électricien d'installation agréé pour votre application de service. Ce câble exige une paire de fils torsadés et blindés d'un minimum de 18AWG et devrait produire au plus une perte de signal de 15% sur la longueur du câble.

Le National Electrical Code ainsi que les codes locaux doivent être respectés lors de l'installation de ces modèles. Tout le câblage électrique doit être passé à travers des conduits et raccords approuvés. L'utilisation de conduits et raccords métalliques est nécessaire pour permettre la mise à la terre de l'enceinte.

1. Voir les figures 2 et 3. Connecter les fils communs (-) audio à la borne commune du haut-parleur et aux fils positifs (+) audio à la borne (+) (SIG).

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si le carter n'est pas fermé correctement. Pour réduire la possibilité d'explosion, le couvercle de carter du Modèle AM15XD2 doit être maintenu fermé étanche pendant que les circuits sont sous tension.

2. Assurez-vous que le joint de couvercle en caoutchouc Néoprène est bien assis dans la rainure du carter et réinstallez le couvercle du carter.

IV. ESSAI/FONCTIONNEMENT.

AVERTISSEMENT

Dans certaines situations, ces dispositifs peuvent produire des sons suffisamment forts pour causer des dommages à l'ouïe. Une protection adéquate de l'ouïe doit être portée si on est très près du dispositif pendant les essais. Les recommandations de la Norme OSHA de niveau de son (29 CFR 1910) ne doit pas être dépassées.

- A. A. Après avoir terminé l'installation, assurez-vous de tester le système pour vérifier que chaque haut-parleur fonctionne correctement. Si vous trouvez que l'appareil est trop fort pour l'emplacement choisi, ajustez le niveau du volume du haut-parleur à la source.

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si le carter n'est pas fermé correctement. Pour réduire la possibilité d'explosion, le couvercle de carter du Modèle AM15XD2 doit être maintenu fermé étanche pendant que les circuits sont sous tension.

- B. Après fin de l'essai initial du système, établissez un programme pour essai périodique de ce dispositif.
- C. Fournissez une copie de ces instructions à l'ingénieur de sécurité, à l'opérateur du système et au personnel d'entretien.

MESSAGE DE SECURITE AUX OPERATEURS

Même si votre système d'avertissement fonctionne correctement, il peut ne pas être complètement efficace. Les gens peuvent ne pas voir, entendre ou respecter votre signal d'avertissement. Vous devez reconnaître ce fait et vous assurer que votre signal d'avertissement a l'effet voulu par des séquences correctes d'essai/formation dans votre application spécifique.

V. ENTRETIEN.

MESSAGE DE SECURITE AU PERSONNEL D'ENTRETIEN

Le non-respect des précautions et instructions de sécurité peut en résulter en dommages aux biens, blessures graves ou mortelles pour vous ou d'autres.

- Lire et comprendre toutes les instructions avant d'utiliser ce système.
 - Pour réduire le risque de chocs électriques ou un allumage d'atmosphères dangereuses, n'effectuez pas d'entretien ou de service sur cet appareil si les circuits sont sous tension.
 - Des vérifications périodiques doivent être faites pour assurer que l'efficacité de ce dispositif n'a pas été réduite parce que le haut-parleur s'est bouché avec des matières étrangères ou parce que des objets ont été placés devant le haut-parleur.
 - Tout entretien de cet appareil DOIT être fait par un électricien professionnel conformément aux recommandations NEC et aux codes locaux.
 - Ne jamais modifier l'unité de quelle que manière que ce soit. La sécurité dans des lieux dangereux peut être mise en cause si des ouvertures supplémentaires ou d'autres modifications sont faites au Modèle AM15XD2.
 - Les plaques de caractéristiques, qui contiennent des informations d'avertissement ou autre, importantes pour le personnel d'entretien, ne doivent pas être cachées si l'extérieur du dispositif est peint.
- A. Vérifiez périodiquement ce dispositif pour vérifier qu'il n'y a pas de produits étrangers dans ou devant le haut-parleur qui puissent réduire son efficacité.
- B. Un essai doit être effectué périodiquement. Référez-vous à NFPA 72G, aux codes locaux incendie et à l'administration qui a la juridiction pour ces informations.
- C. Au cas où un ajustage de volume ou une autre réparation serait nécessaire, assurez-vous de vous référer au message de sécurité pour le personnel d'entretien avant de continuer.

VI. SERVICE.

AVERTISSEMENT

Des réparations ou un service non autorisé de cet appareil peuvent résulter en dégradation des performances et/ou dommages aux biens, blessures graves ou mortelles pour vous ou d'autres.

Si vous découvrez un appareil ne fonctionnant pas bien, n'essayez pas de réparer sur place ou de remplacer des pièces.

L'usine de Federal Signal fera le service de votre matériel et fournira une assistance technique pour tout problème qui ne puisse être traité localement.

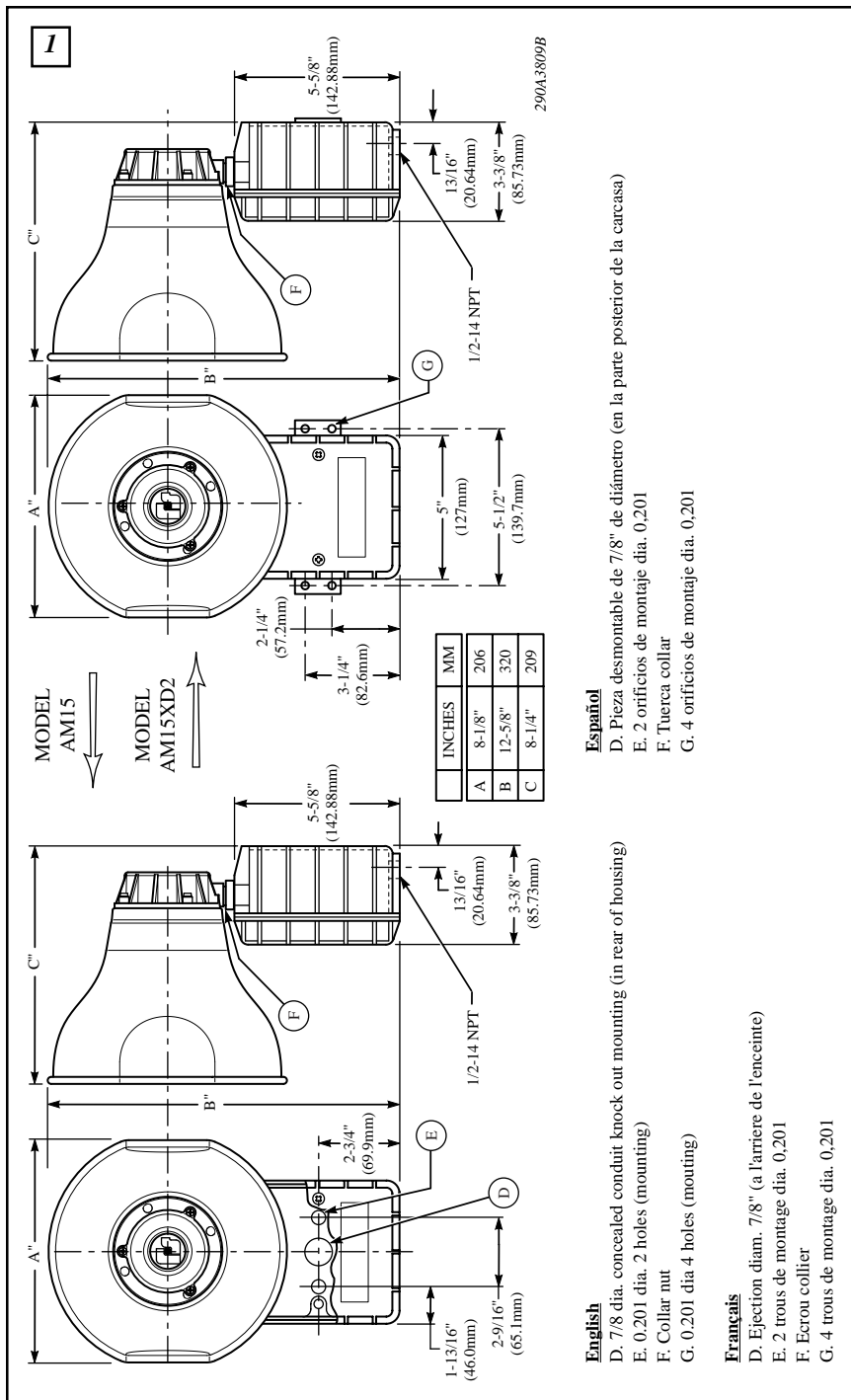
Toutes les unités renvoyées à Federal Signal pour un service, inspection ou réparation doivent être accompagnées d'une autorisation de retour de matériel. Cette R.M.A. peut être obtenue auprès du distributeur local ou du représentant du fabricant.

A ce moment, une courte explication du service demandé, ou la nature du mauvais fonctionnement doit être donnée.

Adressez toutes les communications et expéditions à:

FEDERAL SIGNAL CORPORATION

Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195



English

- D. 7/8 dia. concealed conduit knock out mounting (in rear of housing)
- E. 0.201 dia. 2 holes (mounting)
- F. Collar nut
- G. 0.201 dia 4 holes (mounting)

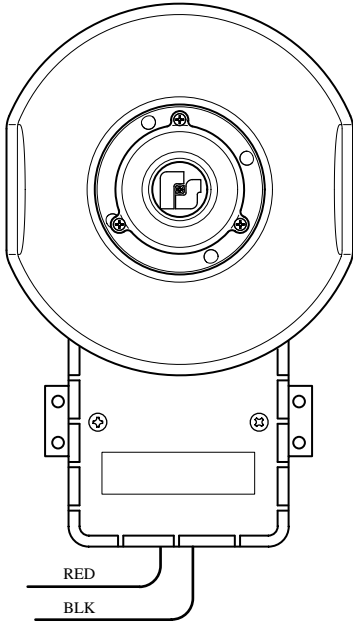
Français

- D. Ejection diam. 7/8" (a l'arriere de l'enceinte)
- E. 2 trous de montage dia. 0,201
- F. Ecrou collier
- G. 4 trous de montage dia. 0,201

Español

- D. Pieza desmontable de 7/8" de diámetro (en la parte posterior de la carcasa)
- E. 2 orificios de montaje dia. 0,201
- F. Tuerca collar
- G. 4 orificios de montaje dia. 0,201

2



(A)

**AM15
&
AM15XD2**

290A3810B

English

A. Speaker models

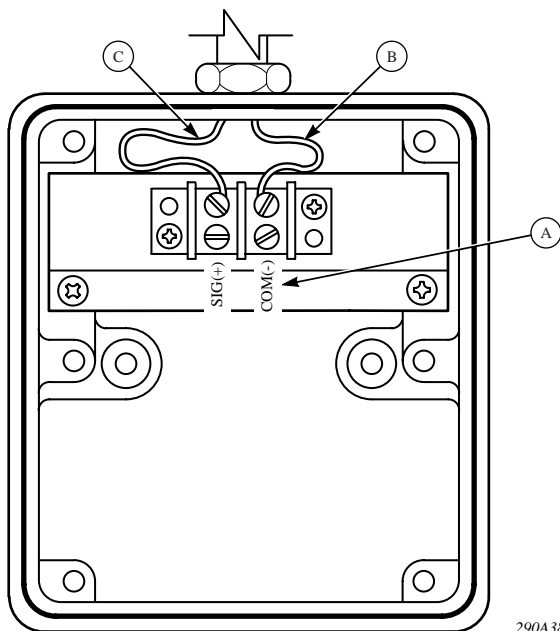
Español

A. Parlante modelos

Français

A. Haut-parleur modeles

3



290A3808

English

- A. NOTE: Label appears on this side of terminal strip. Shown here on mounting bracket for reference only.
- B. Common (-) leads to common terminal.
- C. Positive (+) leads to (+) or SIG.

Español

- A. NOTA: Las letras aparecen en este lado de la regleta de conexiones. Se muestran aquí en el soporte de montaje solo como referencia
- B. Conectores comunes (-) al terminal común.
- C. Cables positivos (+) al terminal (+) o (SIG).

Français

- A. NOTE:-Les lettres sur ce cote de la bande de borne montrees ici sur le support de montage sont donnees uniquement pour reference.
- B. Les cables communs (-) sur la borne commune.
- C. Fils positifs (+) à la borne (+) ou (SIG).

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SERIES C, MODELS AM300 and AM300GCX

**INSTALLATION INSTRUCTIONS FOR SERIES C, MODEL AM300 AND
AM300GCX AUDIOMASTER® SPEAKER**

SERIES C, MODELOS AM300 y AM300GCX

**INSTRUCCIONES DE INSTALACIÓN PARA PARLANTES AUDIOMASTER®
SERIES C, MODELO AM300 Y AM300GCX**

SÉRIE C, MODÈLES AM300 et AM300GCX

**INSTRUCTIONS D'INSTALLATION POUR LA SÉRIE C, MODÈLES AM300 et
AM300GCX AUDIOMASTER® SPEAKER**

Address all communications and shipments to:

Dirija todas la correspondencia y envíos a:

Adressez toutes les communiations et expéditions à:



FEDERAL SIGNAL CORPORATION

Electrical Products Division

2645 Federal Signal Drive

University Park, IL 60466-3195

INSTALLATION INSTRUCTIONS FOR MODEL AM300 AND AM300GCX AUDIOMASTER® SPEAKER

WARNING

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

SAFETY MESSAGE TO INSTALLERS

Peoples lives depend on your safe installation of our products. It is important to follow all instructions shipped with the products. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electric Code and will follow the NEC guidelines as well as local codes.

The selection of the mounting location for the device, its controls and routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this equipment.
- This unit must be installed by a qualified electrician in accordance with NFPA 72, and National and local Electrical and Fire Codes, under the direction of the authority having jurisdiction.
- Do not connect this unit to the system when power is on.
- All effective warning speakers produce loud sounds which may cause , in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- After installation, test the sound system to ensure proper operation.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- Show these instructions to your Safety Engineer and then file them in a safe place and refer to them when maintaining and/or reinstalling the unit.
- After installation and completion of initial system test, a program of periodic testing of this device must be established. Refer to NFPA 72G, local Fire Codes and the authority having jurisdiction for this information.
- Consult the authority having jurisdiction in your area regarding the proper use and installation of this product.

I. GENERAL.

The AudioMaster Model AM300 and AM300GCX are 25 Vrms and 70 Vrms, indoor/outdoor rated, selectable power output (8 and 15 watts) loudspeakers for use with fire alarm and general signaling systems such as Federal Signal's SelecTone® system. They are designed to reproduce electronically generated warning tones, which command rapid recognition, and full range voice communication. They are suitable for use in areas with high ambient noise levels. The speaker projector is adjustable and may be repositioned to obtain desired sound distribution.

The AM300GCX is suitable for use in Class I, Groups A, B, C, & D, Division 2 and Class II, Groups F & G, Division 2 classified and Class III locations.

II. SPECIFICATIONS.

Operating Voltage	25 Vrms or 70 Vrms
Power Input (selectable)	8 W and 15 W
Weight (approx.)	5 lb. (2.25kg)

Size	117/8" (302mm) high, 81/8" (206mm) wide, 8" (203mm) deep.
Construction	Aluminum enclosure painted with grey electrostatic powder coating. Amplifier housing sealed with neoprene rubber gasket.

Audibility information is shown in table 1.

III. INSTALLATION.

A. Unpacking.

After unpacking the speaker, examine it carefully for possible damage that may have occurred in transit. If equipment has been damaged, immediately file a claim with the carrier stating extent of damage. Carefully check all shipping labels and tags for special instructions before removing or destroying them.

B. Mounting Arrangements (See figure 1).

CAUTION

To maintain the hazardous location rating of the Model AM300GCX, do not use the 7/8" knockout (concealed conduit mounting).

The speaker can be mounted on any relatively flat surface. Conduit connection can be made to 1/2" threaded opening at bottom of housing or, in the case of the AM300, to 7/8" knockout in rear of housing. After the mounting location and mounting method have been selected, proceed with the applicable instructions below.

WARNING

Property damage, serious injury, or death could occur if an accumulation of water, snow, dust, etc. resides in the speaker projector, severely reducing or preventing operation of this device.
Mount the unit so speaker projector is pointed horizontally or slightly downward.

1. Flat Surface Mounting.

- a. Remove and retain the two screws that secure cover to housing. Remove the cover.

WARNING

Property damage, serious injury, or death could occur if any objects are in front of speaker, severely reducing optimum sound distribution. For maximum effectiveness, ensure that the front of the speaker is clear of obstructions.

- b. Select the mounting location and place rear of housing against mounting surface.
- c. Using the mounting holes (two (2) inside the Model AM300's housing or four (4) in the AM300GCX's external mounting bracket) as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

CAUTION

Before drilling holes in any surface, ensure that both sides of surface are clear of items that could be damaged.

- d. Secure the unit to the mounting surface with #10 screws appropriate for the type of mounting surface material.

WARNING

Property damage, serious injury or death could occur if the projector is mishandled during installation or over time. DO NOT rotate the projector more than 180 degrees or internal speaker wiring may be damaged.

e. Reposition speaker projector if necessary to obtain desired sound coverage.

Loosen collar nut (see figure 1) and move projector to desired position.

f. Before reinstalling the housing cover, read paragraph III.C. Electrical Connections below and make the necessary electrical connections.

2. Model AM300 Concealed Conduit Mounting.

a. Remove and retain the two screws that secure cover to housing. Remove the cover.

b. Remove the 7/8" knockout at rear of housing.

c. Install the conduit connection.

NOTE

If installation on an existing electrical box is desired, an optional Model CC adapter plate is required.

d. Select the mounting location and place rear of housing against mounting surface.

e. Using the two (2) mounting holes as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

CAUTION

Before drilling holes in any surface, ensure that both sides of surface are clear of items that could be damaged.

f. Secure the unit to the mounting surface with #10 screws appropriate for the type of mounting surface material.

WARNING

Property damage, serious injury or death could occur if the projector is mishandled during installation or over time. DO NOT rotate the projector more than 180 degrees or internal speaker wiring may be damaged.

g. Reposition speaker projector if necessary to obtain desired sound coverage. Loosen collar nut (see figure 1) and move projector to desired position.

h. Before reinstalling the housing cover, read paragraph III.C. Electrical Connections below and make the necessary electrical connections.

C. Electrical Connections.

DANGER

To avoid electrical shock, do not connect wires when circuits are energized.

NOTE

Audio wires should be sized properly by your licensed installation electrician for your service application. This cable requires a twisted shielded pair with an 18AWG minimum and should produce no more than 15% signal loss over the length of the cable run.

National Electrical Code as well as local codes must be adhered to in installation of these models. All electrical wiring must be routed through approved conduit and fittings. The use of metal conduit and fittings is required to provide grounding of the enclosure.

1. See figures 2 and 3. Connect the audio common (-) leads to the speaker's common terminal and audio positive (+) leads to desired wattage terminal.

WARNING

An uninsulated section of a single conductor must NOT be looped around a terminal and used as two separate connections. NFPA 72 requires that the wire is severed to provide electrical supervision of the connection.

2. The AM300 and AM300GCX are factory configured for 25 Vrms operation. If 70 Vrms operation is desired, remove the wire leading to the speaker from the terminal marked 25V and connect it to the terminal marked 70 V. (see figure 3).

WARNING

Property damage, serious injury or death could occur if the housing is not closed properly. To reduce the possibility of explosion, the Model AM300GCX's housing cover must be kept tight while circuits are energized.

3. Be sure the neoprene rubber cover gasket is properly seated in the housing groove and reinstall housing cover.

IV. TESTING/OPERATING.

WARNING

Under certain conditions these devices are capable of producing sounds loud enough to cause hearing damage. Adequate hearing protection should be worn if standing within close proximity to device while testing. Recommendations in the OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.

- A. After installation is complete, be sure to test the system to verify that each speaker operates satisfactorily. If it is found that the unit is too loud for its location, a lower wattage tap may be selected. Carefully remove the housing cover and move the positive (+) lead to a lower wattage tap (see figure 3). Reinstall the housing cover and retest.

WARNING

Property damage, serious injury or death could occur if the housing is not closed properly. To reduce the possibility of explosion, the Model AM300GCX's housing cover must be kept tight while circuits are energized.

- B. After completion of initial system test, establish a program for periodic testing of this device.
- C. Provide a copy of these instructions for the Safety Engineer, system operator(s) and maintenance personnel.

SAFETY MESSAGE TO OPERATORS

Even if your warning system is operating properly, it may not be completely effective. People may not hear or heed your warning signal. You must recognize this fact and ensure that your warning signal achieves its intended effect through proper test/training sequences within your specific application(s).

V. MAINTENANCE.

SAFETY MESSAGE TO MAINTENANCE PERSONNEL

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

- Read and understand all instructions before performing maintenance on this unit.
- To reduce the risk of electrical shock, or ignition of hazardous atmospheres, do not perform maintenance or service on this unit when circuits are energized.
- Periodic checks should be made to ensure that effectiveness of this device has not been reduced because speaker has become clogged with a foreign substance or because objects have been placed in front of the speaker.

- Any maintenance to this unit **MUST** be performed by a trained electrician in accordance with NEC guidelines and local codes.
- Never alter this unit in any manner. Safety in hazardous locations may be jeopardized if additional openings or alterations are made to Model AM300GCX.
- The nameplates, which contain cautionary or other information of importance to maintenance personnel, should not be obscured if exterior of device is painted.
 - A. Periodically check this device to verify that there are no foreign substances in, or in front of, the speaker which will reduce its effectiveness.
 - B. Testing should be periodically performed. Refer to NFPA 72G, local Fire Codes and the authority having jurisdiction for information.
 - C. In the event a volume adjustment or other repair is required, be sure to refer to the Safety Message For Maintenance Personnel before proceeding.

VI. SERVICE.

WARNING

Unauthorized repair/servicing of the unit may result in degradation of performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair/retrofit of parts.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair, must be accompanied by a Return Material Authorization. This R.M.A. can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION
 Electrical Products Division
 Service Department
 2645 Federal Signal Drive
 University Park, IL 60466-3195

INSTRUCCIONES DE INSTALACIÓN PARA PARLANTES AUDIOMASTER® SERIES C, MODELO AM300 Y AM300GCX

PRECAUCION

El no seguir todas las instrucciones y precauciones de seguridad puede acarrear daños a la propiedad, heridas serias e incluso su muerte o la de otros.

MENSAJE DE SEGURIDAD A LOS INSTALADORES

La vida de personas depende de la instalación segura de nuestros productos. Es importante seguir todas las instrucciones empacadas con los productos. Este dispositivo lo debe instalar un electricista calificado que esté familiarizado con el Código Nacional Eléctrico y siga las normas así como los códigos locales.

La selección del sitio de montaje del dispositivo, sus controles y la ruta del alambrado, se hará bajo la dirección del Ingeniero de las facilidades y del Ingeniero de seguridad. Sin embargo, a continuación se listan algunas otras instrucciones y precauciones de seguridad que se deben seguir:

- Lea y comprenda todas las instrucciones antes de instalar u operar este equipo.
- Esta unidad debe ser instalada por un electricista calificado de acuerdo con el NFPA 72 y los códigos eléctricos y de incendio Nacionales y locales, bajo la dirección de la autoridad competente.
- No conecte esta unidad al sistema si está encendido.
- Todos los parlantes efectivos de prevención producen sonidos fuertes, que pueden causar en ciertas ocasiones, pérdida permanente del oído y se deben tomar las debidas precauciones tales como usar protectores auditivos.
- Después de instalado, asegúrese de que el sistema de sonido ofrece una operación apropiada.
- Todos los parlantes efectivos de prevención producen sonidos tan fuertes que pueden causar pérdida permanente del oído. El aparato debe ser instalado lo bastante lejos de los oyentes potenciales para limitar su exposición mientras mantenga su efectividad. El código OSHA 1910.95 (EEUU) de regulación Federal del ruido, da las guías que deben usarse para los niveles de exposición permisible al ruido.
- Enseñe estas instrucciones a su Ingeniero de Seguridad y después archívelas en un lugar seguro y consúltelas cuando le haga mantenimiento o reinstale la unidad.
- Después de la instalación y prueba inicial del sistema, programe pruebas periódicas de este aparato. Diríjase al NFPA 72G, los Códigos locales de incendio y la autoridad competente para obtener esta información.
- Consulte con la autoridad competente en su área, lo correspondiente al correcto uso e instalación de este producto.

I. GENERAL.

Los AudioMaster® Modelos AM300 y AM300GCX son altoparlantes, de potencia de salida seleccionable (0,5 a 15 vatios), para interior o intemperie, de 25Vrms y 70Vrms. Son para uso como alarma de incendio y sistemas de señales generales como el sistema SelecTone de Federal Signal. Están diseñados para reproducir tonos de alarma generados electrónicamente, los cuales comandan un reconocimiento rápido y un amplio rango de comunicación de voces. Son ideales para usar en áreas con un alto nivel de ruido. El proyector del parlante es ajustable y puede reposicionarse para obtener la distribución de sonido deseada.

El AM300GCX es adecuado para utilizar en sitios Clase 1, Grupos A, B, C, y D, División 2, Clase II, Grupos F y G, División 2 clasificados y Clase III.

II. ESPECIFICACIONES.

Voltaje de operación	25 Vrms o 70 Vrms
Corriente de entrada (seleccionable)	8W y 15W
Peso (aproximado)	5lbs (2,25 kg)
Tamaño	302mm (alto), 206mm (ancho), 203mm (largo)

Construcción

Caja de aluminio pintada con una capa de polvo electrostático gris.

Caja del amplificador sellada con un empaque de neopreno.

Información de Audibilidad se muestra en la tabla 1.

III. INSTALACION.

A. Desempaque.

Después de desempacar la unidad, examine cuidadosamente si hay daños de transporte. Si hubo daños, haga de inmediato un reclamo al transportador, estableciendo el monto del daño. Revise cuidadosamente todos los sellos de embarque y marquillas por instrucciones especiales antes de removerlos o destruirlos.

B. Arreglos de montaje (Ver figura 1).

PREVENCION

Para mantener la clasificación de seguridad en áreas peligrosas del Modelo AM300GCX, no use el disco removible de 7/8" (montaje en conduit embebido).

El parlante puede ser montado en una superficie relativamente plana. Las conexiones de conduit pueden ser de rosca de 1/2" con entrada en la parte baja de la caja. También el Modelo AM300 puede ser montado por un disco removible al fondo de la caja. Después de que la localización de montaje y el método de montaje ha sido seleccionado, proceda con las instrucciones que se listan a continuación.

PRECAUCION

Daños a la propiedad, heridas serias o la muerte podrían ocurrir si se presenta una acumulación de agua, nieve , polvo, etc en el parlante, lo que reduce severamente o evita la operación del dispositivo.

Manatenga el parlante en posición horizontal o con una ligera inclinación hacia abajo.

1. Montaje en Superficie Plana.

- a. Afloje los 2 tornillos que aseguran la tapa de la caja. Retire la tapa.

PRECAUCION

Daños a la propiedad, heridos graves o incluso su muerte o la de otros puede ocurrir si cualquier objeto está en frente del parlante, reduciendo severamente la distribución óptima del sonido.

Para mayor efectividad, asegúrese de que el frente del parlante esté despejado de cualquier obstáculo.

- b. Seleccione la localización de montaje y coloque la parte posterior de la caja contra la superficie de montaje.
- c. Usando los huecos de montaje (dos dentro de la caja del Modelo AM300 o 4 en el soporte de montaje del Modelo AM300GCX) como una plantilla, marque los puntos a perforar en la superficie de montaje. Vea la figura 1 para localización y dimensión de los huecos de montaje.

PREVENCION

Antes de perforar los huecos en cualquier superficie, asegúrese de que ambos lados de la superficie están despejados de cualquier cosa que puede dañarse.

- d. Asegure la unidad a la superficie de montaje con tornillos #10 apropiados para el tipo de material de la superficie de montaje.

PRECAUCION

Daños a la propiedad, heridas serias e incluso la muerte pueden ocurrir si el parlante es mal manejado durante la instalación o con el tiempo. NO rote el parlante más de 180° o el cableado interno del parlante sufrirá daños.

- e. Reposicione el parlante, si es necesario, para obtener la cobertura de sonido deseada. Afloje la tuerca (ver figura 1) y mueva el proyector a la posición deseada.
- f. Antes de reinstalar la tapa a la caja, lea el párrafo III. C las Conexiones Eléctricas que se listan abajo y haga todas las conexiones eléctricas necesarias.

2. Montaje en Conduit Embebido del Modelo AM300.

- a. Retire y conserve los dos tornillos que aseguran la tapa a la caja. Retire la tapa.
- b. Retire el disco variable de 7/8" de la parte posterior de la caja.
- c. Instale la conexión del conduit.

NOTA

Si se desea una instalación en una caja eléctrica ya existente, se requiere una plato adaptador opcional Modelo CC.

- d. Seleccione la localización de montaje y coloque la parte posterior de la caja contra la superficie de montaje.
- e. Use los dos huecos de montaje como una platina, marque los puntos a perforar en la superficie de montaje. Vea la figura 1 para las dimensiones y localización de los huecos de montaje.

PRECAUCION

Antes de perforar los huecos en cualquier superficie, asegúrese de que ambos lados de la superficie están libres de cosas que se puedan dañar.

- f. Asegure la unidad a la superficie de montaje con tornillos #10 apropiados para el tipo de material de la superficie de montaje.

PREVENCION

Daños a la propiedad, heridas serias e incluso su muerte o la de otros pueden ocurrir si el proyector no se maneja adecuadamente durante la instalación o cualquier tiempo después. NO rote el proyector más de 180° o el cableado interno del parlante puede sufrir daños.

- g. Reposicione el proyector si es necesario para obtener la cobertura de sonido deseada. Afloje la tuerca (ver figura 1) y mueva el proyector a la posición deseada.
- h. Antes de reinstalar la tapa de la caja, lea el párrafo III.C, las conexiones eléctricas que se listan abajo y haga todas las conexiones eléctricas necesarias.

C. Conexiones Eléctricas.

PELIGRO

Para evitar descargas eléctricas, no conecte cables cuando los circuitos estén energizados.

NOTA

Los cables de audio deben tener el tamaño correcto seleccionado por un electricista instalador autorizado para su aplicación de servicio. Este cable requiere un par trenzado blindado con un cable calibre 18AWG como mínimo y debe producir menos de 15% de pérdida de señal a lo largo del tramo del cable.

Durante la instalación de estos modelos, deben seguirse los Códigos Eléctricos Nacionales así como los locales. Todo el cableado debe hacerse a través de conduit y accesorios aprobados. Estos sería de metal si van a servir como tierra de la caja.

1. Vea las figuras 2 y 3. Conecte las terminales negativas (-) de audio a la terminal negativa del parlante y las terminales positivas (+) de audio a la terminal de potencia deseada.

AVISO

Una sección sin aislante con un solo conductor NO debe hacer circuito alrededor de un terminal y sea usado como dos conexiones separadas. La NFPA 72 requiere que el cable sea cortado para dar supervisión eléctrica a la conexión.

2. Los Modelos AM300 y AM300GCX están configurados de fábrica para 25Vrms de operación. Si se desean 70 Vrms de operación, remueva el extremo del cable del parlante de la terminal marcada como 25V y conéctelo a la terminal marcada como 70V (ver figura 2).

PREVENCION

Daños a la propiedad, heridas serias e incluso su muerte o la de otros puede ocurrir, si la caja no se cierra adecuadamente. Para reducir la posibilidad de explosión, la tapa de la caja del Modelo AM300GCX se debe mantener bien cerrado mientras los circuitos estén energizados.

3. Asegúrese de que el empaque de neopreno de la caja está bien colocado en la ranura de la caja y reinstale la tapa de la caja.

IV. PRUEBA/OPERACION.

PRECAUCION

Bajo ciertas condiciones estos dispositivos son capaces de producir sonidos suficientemente fuertes como para causar daños auditivos. Se debe usar adecuada protección auditiva si se va a premanecer dentro de cierta proximidad al dispositivo cuando se está probando. Las recomendaciones de la OSHA (EEUU) con respeto a los Niveles Estándares de Ruido (29CFR 1910) no se deben exceder.

- A. Después de que la instalación se ha terminado, prueba el sistema para verificar que cada parlante opera satisfactoriamente. Si se encuentra que la unidad es muy ruidosa para la localización, se debe seleccionar una corriente más baja. Cuidadosamente remueva la tapa de la caja y mueva la terminal positiva (+) para bajar la corriente (ver figura 2). Reinstale la tapa de la caja y prueba el sistema nuevamente.

PRECAUCION

Daños a la propiedad, heridas serias o incluso su muerte o la de otros puede ocurrir si la caja no se cierra adecuadamente. Para reducir la posibilidad de explosión, la tapa de la caja del Modelo AM300GCX se debe mantener bien cerrado mientras los circuitos están energizados.

- B. Después de terminar la prueba inicial del sistema, establezca un programa periódico de prueba de este dispositivo
- C. Provea una copia de estas instrucciones al Ingeniero de Seguridad, los operadores del sistema y el personal de mantenimiento.

MENSAJE DE SEGURIDAD A LOS OPERADORES

Aún si su sistema está operando adecuadamente, el puede no ser completamente efectivo. La gente puede no oír o atender su señal de alarma. Usted debe detectar este hecho y asegurarse de que la señal de alarma alcance el efecto deseado por pruebas o simulacros apropiados dentro de su aplicación específica.

V. MANTENIMIENTO.

MENSAJE DE SEGURIDAD PARA EL PERSONAL DE MANTENIMIENTO

El no seguir todas las precauciones e instrucciones que se listan a continuación, puede resultar en daños a la propiedad, heridas serias e incluso su muerte o la de otros .

- Lea y comprenda todas las instrucciones antes de operar este equipo.
 - Para reducir el riesgo de descarga eléctrica, o ignición de atmósferas peligrosas, no realice mantenimiento a esta unidad cuando los circuitos estén energizados.
 - Se deben realizar pruebas periódicas para asegurar que la efectividad de este dispositivo no se ha reducido por que el parlante se bloquea con sustancias extrañas o hay objetos extraños delante del parlante.
 - Cualquier mantenimiento a la unidad TIENE que ser hecho por un electricista entrenado de acuerdo con el NEC y los códigos locales.
 - Nunca altere la unidad de manera alguna. La seguridad en sitios de alto riesgo puede ponerse en peligro si se adicionan agujeros o se hacen alteraciones al Modelo AM300GCX.
 - La placa, que puede tener información de importancia o precauciones para el personal de mantenimiento, no se debiera cubrir con pintura si la carcasa exterior se pinta.
- A. Periódicamente revise este dispositivo para verificar que no hay sustancias extrañas dentro, o en frente, del parlante lo que reduce su efectividad.
 - B. Se debe realizar una prueba periódica. Lea NFPA 72G, códigos locales de incendios o autoridad competente para suministrar esta información.
 - C. En el evento de que se requiera un ajuste de volumen, o una reparación, antes de proceder diríjase al Mensaje de Seguridad para el Personal de Mantenimiento.

VI. SERVICIO.

PRECAUCION

Reparación o servicio no autorizado de la unidad puede resultar en degradación del desempeño y/o daños a la propiedad, heridas graves e incluso su muerte o la de otros. Si se encuentra un mal funcionamiento de la unidad, no intente ninguna reparación en el sitio/o reutilizar partes usadas.

La Federal Signal Corporation le hará servicio a su equipo o proveerá asistencia técnica a los problemas que no se puedan manejar localmente.

Cualquier unidad que se devuelva a Federal Signal para servicio, inspección o reparación, debe acompañarse de una autorización de “material devuelto” (R.M.A.). Esta R.M.A. se puede obtener con el representante o distribuidor local del fabricante y se adjuntará una breve explicación de la necesidad del servicio o la naturaleza del mal funcionamiento.

Dirija todas las comunicaciones y envíos a:

FEDERAL SIGNAL CORPORATION

Electrical Products Division
 Service Department
 2645 Federal Signal Drive
 University Park, IL 60466-3195

INSTRUCTIONS D'INSTALLATION POUR LA SÉRIE C, MODÈLES AM300 et AM300GCX AUDIOMASTER® SPEAKER

AVERTISSEMENT

Le non-respect de toutes les précautions et instructions de sécurité peut résulter en dommages aux biens, en blessures graves ou mortelles pour vous ou d'autres.

MESSAGE DE SECURITE AUX INSTALLATEURS

Ces vies humaines dépendent de votre installation de nos produits en sécurité. Il est important de lire, comprendre et suivre toutes les instructions expédiées avec ce produit. Ce dispositif doit être installé par un électricien professionnel qui est complètement au courant du Code Electrique National et respectera les recommandations NEC ainsi que les codes locaux.

Le choix de l'endroit de montage du dispositif, de ses commandes et du passage des câbles doit être effectué sous la direction de l'ingénieur des services électriques et de l'ingénieur de sécurité. De plus, sont énumérées ci-dessous quelques autres instructions et précautions de sécurité importantes que vous devez suivre:

- Lire et comprendre toutes les instructions avant d'installer ou d'utiliser ce matériel.
- Cet appareil doit être installé par un électricien professionnel conformément à NFPA 72, et aux codes électriques et incendie nationaux et locaux, sous la direction de l'autorité qui a la juridiction.
- Ne connectez pas cette unité au système si la tension est présente.
- Tous les haut-parleurs effectifs d'avertissement produisent des sons puissants qui peuvent causer dans certaines situations une perte permanente de l'ouïe. Vous devez prendre des précautions appropriées comme le port de protection de l'ouïe.
- Après installation, essayez le système de signalisation d'urgence pour vérifier que son fonctionnement est correct.
- Tous les haut-parleurs d'avertissement effectifs produisent des sons forts qui peuvent causer dans certaines situations la perte de l'ouïe. Le dispositif doit être installé suffisamment loin des auditeurs potentiels pour limiter leur exposition tout en maintenant son efficacité. Le code OSHA de Federal Regulations 1910.95 (Norme de bruit) donne des recommandations qui peuvent être utilisées concernant les niveaux d'exposition au bruit permis.
- Montrez ces instructions à votre ingénieur de sécurité puis classez-les dans un endroit sûr et référez-vous à elles lorsque vous entretenez ou réinstallez l'appareil.
- Après installation et fin du test initial du système, un programme d'essai périodique de ce dispositif doit être établi. Référez-vous à NFPA 72G, codes locaux d'incendie et à l'administration qui a la juridiction pour ces informations.
- Consultez l'administration qui a la juridiction dans votre zone concernant l'utilisation et l'installation correctes de ce produit.

I. GENERALITES.

Les AudioMaster Modèles AM300 et AM300GCX sont des haut-parleurs de 25 Vrms et 70 Vrms, pour utilisation à l'intérieur et à l'extérieur, à sortie de puissance sélectionnable (0,5 à 15 watts) pour utilisation avec alarme incendie et systèmes de signalisation généraux comme le système SelecTone® de Federal Signal. Ils sont conçus pour reproduire des tonalités d'avertissement générées électroniquement, qui commandent une reconnaissance rapide, et communication vocale sur toute la gamme. Ils conviennent pour utilisation dans des zones avec niveaux de bruit ambiant élevés. Le cornet du haut-parleur est ajustable et peut être repositionné pour obtenir la répartition sonore désirée.

Le modèle Am300GCX convient pour les emplacements de Classe I, groupes A, B, C, et D, division 2 et de classe II, groupes F et G, division 2 classifiée et de Classe III.

II. SPECIFICATIONS.

Tension de service	25 Vrms ou 70 Vrms
Puissance à l'entrée (sélectionnable)	8W and 15W
Poids	5 lbs (2,25kg)
Dimensions	11-7/8" (302 mm) de hauteur x 8-1/8" (206 mm) de largeur x 8" (203 mm) de profondeur.
Construction	Enceinte d'aluminium peinte avec un revêtement de poudre électrostatique grise. Carter d'amplificateur scellé avec joint caoutchouc néoprène.

Les informations sur l'audibilité sont données au tableau 1

III. INSTALLATION.

A. Déballage.

Après déballage du haut-parleur, inspectez-le pour voir s'il a été endommagé pendant le transport. S'il a été endommagé, faites une déclaration immédiatement auprès du transporteur en indiquant les dommages. Vérifiez soigneusement toutes les enveloppes, les étiquettes d'expédition et les étiquettes volantes avant de les retirer ou les détruire.

B. Dispositions de Montage (Voir figure 1).

ATTENTION

Pour maintenir la classification pour endroits dangereux du modèle AM300GCX, n'utilisez pas le trou à déboucher de 7/8" (montage à conduit caché).

Le haut-parleur peut être monté sur toute surface relativement plate. La connexion conduit peut être faite avec l'ouverture taraudée de 1/2" en bas du carter ou dans le cas du AM300, à la pièce chassée de 7/8" à l'arrière du carter. Après sélection de l'emplacement de montage et de la méthode de montage, procédez avec les instructions applicables ci-dessous.

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si une accumulation d'eau, de neige, de poussières, etc. se trouvent dans le cornet du haut-parleur, réduisant gravement ou empêchant le fonctionnement de ce dispositif. Montez l'unité de manière que le cornet du haut-parleur soit dirigé horizontalement ou légèrement vers le bas.

1. Montage sur Surface Plane.

- Retirez et gardez les deux vis qui fixent le couvercle sur le carter. Retirez le carter.

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si des objets se trouvent devant le haut-parleur réduisant gravement la répartition optimale de son. Pour une efficacité maximale, assurez-vous que l'avant du haut-parleur est dégagé de toute obstruction.

- Sélectionnez l'emplacement de montage et placez l'arrière du carter contre la surface de montage.
- A l'aide des trous de montage (2) à l'intérieur du carter du Modèle AM300 ou quatre (4) dans le support de montage externe du AM300GCX comme gabarit, marquez les positions de perçage sur la surface de montage. Voir figure 1 pour les emplacements des trous de montage et les dimensions.

ATTENTION

Avant de percer des trous dans une surface, assurez-vous que les deux côtés de la surface sont dégagés de tout élément qui pourrait être endommagé.

- d. Fixez l'appareil à la surface de montage avec les 10 vis appropriées pour le type de matière de la surface de montage.

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si le cornet est malmené pendant l'installation ou plus tard. Ne faites pas tourner le cornet de plus de 180°, sinon le câblage intérieur du haut-parleur peut être endommagé.

- e. Repositionnez le cornet du haut-parleur si nécessaire pour obtenir la couverture sonore désirée. Desserrez l'écrou à embase (voir figure 1) et déplacez le cornet jusqu'à la position désirée.
- f. Avant de réinstaller le couvercle du carter, lisez le paragraphe III.C Connexions électriques ci-dessous et faites les connexions électriques nécessaires.

2. Montage sur Conduit Caché Modèle AM300.

- a. Retirez et gardez les deux vis qui fixent le couvercle au carter. Démontez le carter.
- b. Enlever la pièce chassée 7/8" à l'arrière du carter.
- c. Installez la connexion du conduit.

NOTE

Si l'installation sur un boîtier électrique existant est désirée, une plaque adaptateur Modèle CC, en option, est nécessaire.

- d. Sélectionnez l'endroit de montage et placez l'arrière du carter contre la surface du montage.
- e. A l'aide des deux trous de montage comme gabarit, marquez des positions de perçage sur la surface de montage. Voir la figure 1 pour les emplacements des trous de montage et les dimensions.

ATTENTION

Avant de percer des trous dans une surface, assurez-vous que les deux côtés de la surface sont dégagés de tout élément qui pourrait être endommagé.

- f. Fixez l'appareil à la surface de montage avec les 10 vis appropriées pour le type de matière de la surface de montage.

WARNING

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si le cornet est malmené pendant l'installation ou plus tard. Ne faites pas tourner le cornet de plus de 180°, sinon le câblage intérieur du haut-parleur peut être endommagé.

- g. Repositionnez le cornet du haut-parleur si nécessaire pour obtenir la couverture sonore désirée. Desserrez l'écrou à collerette (voir figure 1) et déplacez le cornet jusqu'à la position désirée.
- h. Avant de réinstaller le couvercle du carter, lisez le paragraphe III.C Connexions électriques ci-dessous et faites les connexions électriques nécessaires.

C. Connexions Electriques.

DANGER

Pour éviter des chocs électriques, ne connectez pas les fils si les circuits sont sous tension.

NOTE

Les fils audio doivent être choisis par votre électricien d'installation agréé pour votre application de service. Ce câble exige une paire de fils torsadés et blindés d'un minimum de 18AWG et devrait produire au plus une perte de signal de 15% sur la longueur du câble.

Le National Electrical Code ainsi que les codes locaux doivent être respectés lors de l'installation de ces modèles. Tout le câblage électrique doit être passé à travers des conduits et raccords approuvés. L'utilisation de conduits et raccords métalliques est nécessaire pour permettre la mise à la terre de l'enceinte.

1. Voir figures 2 et 3. Connectez les câbles audio commun (-) à la borne commune du haut-parleur et le positif audio (+) à la borne de puissance désirée.

AVERTISSEMENT

Une partie non isolée d'un conducteur unique ne doit PAS être mise en boucle autour d'une borne et utilisée comme étant deux connexions séparées. NFPA 72 exige que le fil soit coupé pour permettre la supervision électrique de la connexion.

2. Les AM300 et AM300GCX sont configurés en usine pour fonctionnement en 25 Vrms. Si un fonctionnement en 70 Vrms est désiré, retirez le fil allant au haut-parleur depuis la borne marquée 25V et connectez-le à la borne marquée 70V (voir figure 3).

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si le carter n'est pas fermé correctement. Pour réduire la possibilité d'explosion, le couvercle de carter du Modèle AM300GCX doit être maintenu fermé étanche pendant que les circuits sont sous tension.

3. Assurez-vous que le joint de couvercle en caoutchouc Néoprène est bien assis dans la rainure du carter et réinstallez le couvercle du carter.

IV. ESSAI/FONCTIONNEMENT.

AVERTISSEMENT

Dans certaines situations, ces dispositifs peuvent produire des sons suffisamment forts pour causer des dommages à l'ouïe. Une protection adéquate de l'ouïe doit être portée si on est très près du dispositif pendant les essais. Les recommandations de la Norme OSHA de niveau de son (29 CFR 1910) ne doit pas être dépassées.

- A. Une fois l'installation terminée, n'oubliez pas d'essayer le système pour vérifier que chaque haut-parleur fonctionne de manière satisfaisante. Si on trouve que l'appareil est trop fort pour son emplacement, une prise de puissance plus faible peut être sélectionnée. Retirez soigneusement le couvercle de carter et déplacez le câble positif (à) pour le mettre sur une prise de puissance plus faible (voir figure). Réinstallez le couvercle de carter et refaites l'essai.

AVERTISSEMENT

Des dommages aux biens, des blessures graves ou mortelles peuvent avoir lieu si le carter n'est pas fermé correctement. Pour réduire la possibilité d'explosion, le couvercle de carter du Modèle AM300GCX doit être maintenu fermé étanche pendant que les circuits sont sous tension.

- B. Après fin de l'essai initial du système, établissez un programme pour essai périodique de ce dispositif.
- C. Fournissez une copie de ces instructions à l'ingénieur de sécurité, à l'opérateur du système et au personnel d'entretien.

MESSAGE DE SECURITE AUX OPERATEURS

Même si votre système d'avertissement fonctionne correctement, il peut ne pas être complètement efficace. Les gens peuvent ne pas voir, entendre ou respecter votre signal d'avertissement. Vous devez reconnaître ce fait et vous assurer que votre signal d'avertissement a l'effet voulu par des séquences correctes d'essai/formation dans votre application spécifique.

V. ENTRETIEN.

MESSAGE DE SECURITE AU PERSONNEL D'ENTRETIEN

Le non-respect des précautions et instructions de sécurité peut en résulter en dommages aux biens, blessures graves ou mortelles pour vous ou d'autres.

- Lire et comprendre toutes les instructions avant d'utiliser ce système.
 - Pour réduire le risque de chocs électriques ou un allumage d'atmosphères dangereuses, n'effectuez pas d'entretien ou de service sur cet appareil si les circuits sont sous tension.
 - Des vérifications périodiques doivent être faites pour assurer que l'efficacité de ce dispositif n'a pas été réduite parce que le haut-parleur s'est bouché avec des matières étrangères ou parce que des objets ont été placés devant le haut-parleur.
 - Tout entretien de cet appareil DOIT être fait par un électricien professionnel conformément aux recommandations NEC et aux codes locaux.
 - Ne jamais modifier l'unité de quelle que manière que ce soit. La sécurité dans des lieux dangereux peut être mise en cause si des ouvertures supplémentaires ou d'autres modifications sont faites au Modèle AM300GCX.
 - Les plaques de caractéristiques, qui contiennent des informations d'avertissement ou autre, importantes pour le personnel d'entretien, ne doivent pas être cachées si l'extérieur du dispositif est peint.
- A. Vérifiez périodiquement ce dispositif pour vérifier qu'il n'y a pas de produits étrangers dans ou devant le haut-parleur qui puissent réduire son efficacité.
- B. Un essai doit être effectué périodiquement. Référez-vous à NFPA 72G, aux codes locaux incendie et à l'administration qui a la juridiction pour ces informations.
- C. Au cas où un ajustage de volume ou une autre réparation serait nécessaire, assurez-vous de vous référer au message de sécurité pour le personnel d'entretien avant de continuer.

VI. SERVICE.

AVERTISSEMENT

Des réparations ou un service non autorisé de cet appareil peuvent résulter en dégradation des performances et/ou dommages aux biens, blessures graves ou mortelles pour vous ou d'autres.

Si vous découvrez un appareil ne fonctionnant pas bien, n'essayez pas de réparer sur place ou de remplacer des pièces.

L'usine de Federal Signal fera le service de votre matériel et fournira une assistance technique pour tout problème qui ne puisse être traité localement.

Toutes les unités renvoyées à Federal Signal pour un service, inspection ou réparation doivent être accompagnées d'une autorisation de retour de matériel. Cette R.M.A. peut être obtenue auprès du distributeur local ou du représentant du fabricant.

A ce moment, une courte explication du service demandé, ou la nature du mauvais fonctionnement doit être donnée.

Adressez toutes les communications et expéditions à:

FEDERAL SIGNAL CORPORATION

Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

Table 1.

Power Tap	UL Omnidirectional Sound Level @ 10' dB(A)	Sound Level dB(A) @ 10' on axis
8 watt	99	106
15 watt	99	109

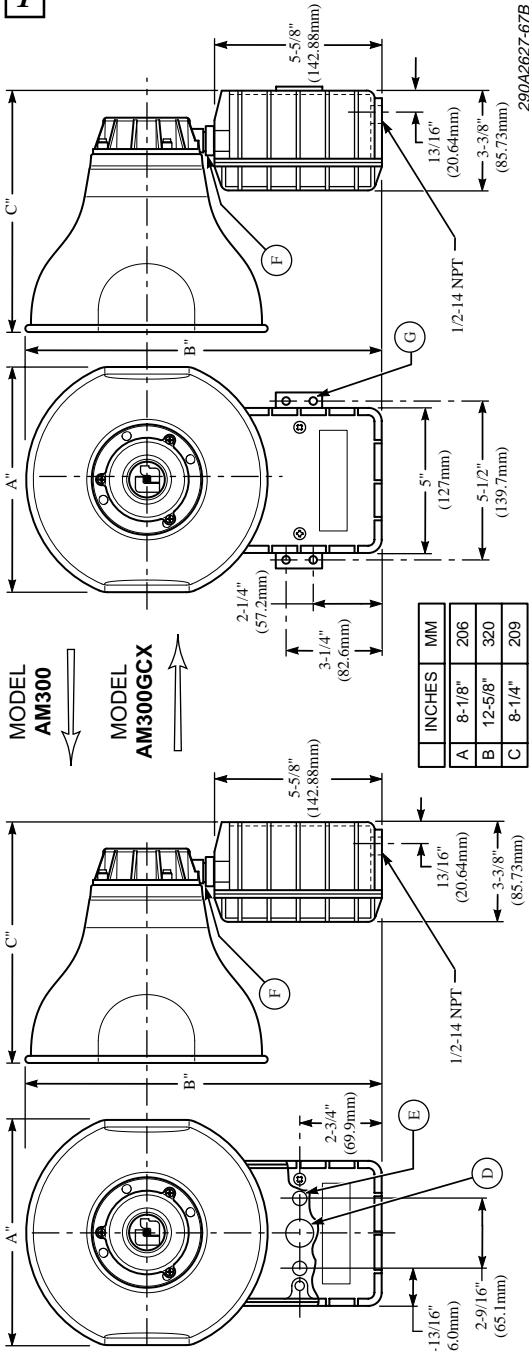
Tabla 1.

Corriente	Nivel de Sonido UL @ 10' dB (A)	Sonido dB (A)
8 watt	99	106
15 watt	99	109

Tableau 1.

Prise de Puissance	Niveau de Son UL @ 10' dB(A)	Puissance Acoustique dB(A)
8 watt	99	106
15 watt	99	109

1



English

- D. 7/8 dia. concealed conduit knock out mounting (in rear of housing)
- E. 0.201 dia. 2 holes (mounting)
- F. Collar nut
- G. 0.201 dia 4 holes (mounting)

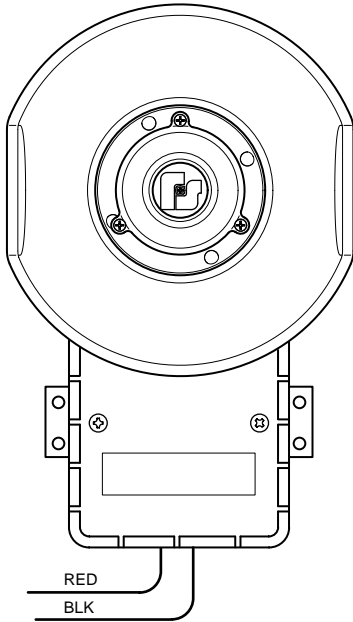
Español

- D. Pieza desmontable de 7/8" de diámetro (en la parte posterior de la carcasa)
- E. 2 orificios de montaje dia. 0,201
- F. Tuerca collar
- G. 4 orificios de montaje dia. 0,201

Français

- D. Ejection diam. 7/8" (a l'arriere de l'enceinte)
- E. 2 trous de montage dia. 0,201
- F. Ecrrou collier
- G. 4 trous de montage dia. 0,201

2



A

**AM300
&
AM300GCX**

290A2773B

English

A. Speaker models

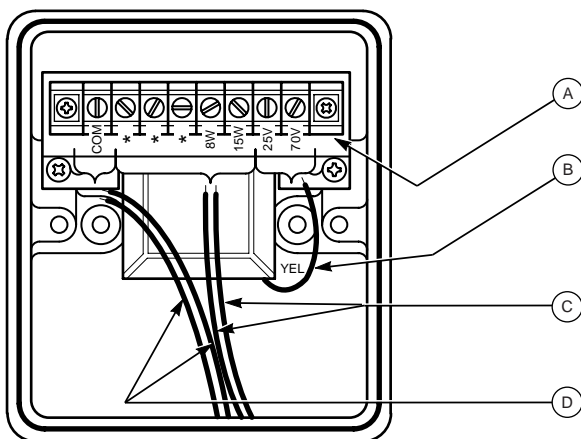
Español

A. Parlante modelos

Français

A. Haut-parleur modeles

3



290A2627-08B

English

- A. NOTE: Letters appear on this side of terminal strip. Shown here on mounting bracket for reference only.
 - B. Speaker internal yellow lead to be connected to 25V or 70V terminal, depending upon external signal source voltage.
 - C. Positive (+) leads to 1 of 2 available wattage terminals.
 - D. Common (-) leads to common terminal.
- * Not Used

Español

- A. NOTA: Las letras aparecen en este lado de la regleta de conexiones. Se muestran aquí en el soporte de montaje solo como referencia
 - B. El conector amarillo interno del altavoz debe de conectarse al terminal de 25V o 70V dependiendo del voltaje de la fuente de señal externa.
 - C. Conectores positivos (+) a 1 de los 2 terminales de vatiaje
 - D. Conectores comunes (-) al terminal común
- * NO USADO

Français

- A. NOTE:-Les lettres sur ce cote de la bande de borne montrees ici sur le supporte de montage sont donnees uniquement pour reference.
 - B. Le cable interne jaune du haut-parleur est a etre connecte sur la borne de 25V ou 70V (en fonction de la tension de source de signal externe)
 - C. Les cables de champ positif (+) sur les bornes de 1 a 2 de puissance en watt disponibles.
 - D. Les cables communs (-) sur la borne commune.
- * PAS UTILISÉ

**MODELS AMSF-25 AND AMSS-25
INSTALLATION AND SERVICE INSTRUCTIONS FOR
MODELS AMSF-25 AND AMSS-25**

**MODELOS AMSF-25 Y AMSS-25
INSTRUCCIONES DE INSTALACIÓN Y SERVICIO PARA
LOS MODELOS AMSF-25 Y AMSS-25**

**MODÈLES AMSF-25 ET AMSS-25
INSTRUCTIONS DE MONTAGE ET D'ENTRETIEN POUR
LES MODÈLES AMSF-25 ET AMSS-25**

Address all communications and shipments to:
Dirija todos la correspondencia y envíos a:
Adressez toutes les communiations et expéditions à:



FEDERAL SIGNAL CORPORATION
Electrical Products Division
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTALLATION AND SERVICE INSTRUCTIONS FOR MODELS AMSF-25 AND AMSS-25

SAFETY MESSAGE TO INSTALLERS, USERS AND MAINTENANCE PERSONNEL

It is important to follow all instructions shipped with this product. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electrical Code and will follow NEC Guidelines as well as local codes.

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the facilities engineer and the safety engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- This is not a Listed safety device and is not intended to be used as such.
- Read and understand all instructions before installing or operating this equipment.
- Disconnect power before connecting or doing any maintenance on this device.
- All effective warning speakers produce loud sounds which may cause in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- After testing is complete, provide a copy of this instruction sheet to all operating personnel.
- Establish a procedure to routinely check the speaker installation for integrity and proper operation. Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

A. Description.

The Federal Signal models AMSF-25 & AMSS-25 are heavy-duty, 8 ohm, round speakers for use in public address or paging systems. These speakers are designed to reproduce full-range voice communication. Both speakers are constructed of spun aluminum. The speaker wiring connections are enclosed in a dust-tight and moisture-proof, gasketed rear cover. All external surfaces are sealed with a metallic gray powder coat paint.

B. Specifications.

Frequency Response: 800 – 5k Hz
Power Handling: 25 Watts
Nominal Impedance: 8 ohms

AMSF-25

AMSS-25

Width:	7.25" (18.4 cm)	6.25" (15.9 cm)
Height:	-	8.4" (21.3 cm)
Depth [without cover]:	4.1" (10.4 cm)	4.1" (10.4 cm)
Depth [with cover]:	5.0" (12.7 cm)	5.1" (12.9 cm)
Shipping Weight:	5.5 lbs. (2.7 kg)	6.0 lbs. (2.5 kg)

C. Unpacking.

After unpacking the unit, examine it for damage that may have occurred in transit. If the equipment has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels, and tags before removing or destroying them.

D. Mounting.

CAUTION

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the facilities and the safety engineer.

Model AMSF-25

Speaker model AMSF-25 is intended for flush mounting. There are six mounting holes approximately 0.22" (5.6mm) in diameter in its outer flange. See figure 1. Install the speaker behind a 6-1/8" (155.6 mm) hole. A small bead of silicone rtv around the outer flange is recommended when installing this unit into a NEMA 4X rated enclosure. Hardware for mounting the speaker shall be provided by the installer. The rear cover (see figure 2) is equipped with a liquid-tight strain relief. This strain relief will accommodate cable diameters between 0.18" (4.6mm) and 0.31" (7.9 mm). Securely attach the cover to the speaker using the provided fasteners.

Model AMSS-25

Speaker model AMSS-25 is equipped with a serrated swivel mounting bracket with a locking nut that allows the speaker to be adjusted through an angle of 90°. The speaker mounting bracket is intended to be mounted on any relatively flat and rigid surface. There are three mounting holes present in the base of the mount. See figure 3. Hardware for mounting the speaker shall be provided by the installer. The rear cover (see figure 2) is equipped with a liquid-tight strain relief. This strain relief will accommodate cable diameters between 0.18" (4.6mm) and 0.31" (7.9 mm). Securely attach the cover to the speaker using the provided fasteners.

WARNING

This unit is heavy and should be mounted on a rigid surface capable of supporting the weight of the speaker.

E. Electrical Connections.

WARNING

Do not connect wires when power is applied.

Audio wires should be sized properly by your licensed installation electrician for your service application. Connect the positive (+) audio line to the terminal with the red indicator.

WARNING

This speaker is an 8-ohm device and should not be connected to a 25 VRMS or a 70 VRMS line without the use of a step-down transformer. Failure to follow these instructions may result in property damage, serious injury, or death to you or others.

F. Service.

CAUTION

Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization. This R.M.A can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:
FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTRUCCIONES DE INSTALACIÓN Y SERVICIO PARA LOS MODELOS AMSF-25 Y AMSS-25

MENSAJE DE SEGURIDAD PARA LOS INSTALADORES, USUARIOS Y PERSONAL DE MANTENIMIENTO

Es importante seguir todas las instrucciones incluidas con este producto. Esta unidad debe ser instalada por un electricista bien adiestrado que conozca completamente todos los requisitos del Código Eléctrico Nacional (NEC son las siglas en inglés) y que siga las pautas del NEC y de los códigos locales.

La selección del lugar de montaje para esta unidad y sus controles, y de las rutas para sus cables, deberá ser llevada a cabo bajo la dirección del ingeniero de planta y del ingeniero de seguridad. Abajo se indican otras importantes instrucciones de seguridad y precauciones que debe seguir:

- Esta no es una unidad clasificada como de seguridad y no se debe usar como tal.
- Lea y entienda bien todas las instrucciones antes de instalar u operar este equipo.
- Desconecte la electricidad antes instalar o hacer cualquier tipo de mantenimiento en esta unidad.
- Todos los altoparlantes usados en este sistema de alarma producen sonidos muy intensos que pueden causar, en ciertas situaciones, una pérdida permanente del oído. Usted debe tomar precauciones apropiadas, tales como usar protección para los oídos.
- Todos los altoparlantes usados en este sistema de alarma producen sonidos muy intensos que pueden causar, en ciertas situaciones, una pérdida permanente del oído. Esta unidad debe ser instalada suficientemente lejos de las personas para limitar la exposición a los ruidos intensos, pero manteniendo siempre la eficacia del sistema. La norma de ruidos 1910.95 del Código de Reglas Federales de OSHA contiene pautas que se deben usar para determinar los niveles permisibles de exposición a sonidos intensos.
- Después de completar las pruebas, entregue una copia de esta hoja de instrucciones a todo el personal de operación.
- Establezca un procedimiento para inspeccionar rutinariamente la instalación de los altoparlantes, con el fin de asegurar su integridad y funcionamiento correcto. Cualquier trabajo de mantenimiento se deberá ejecutar por un electricista adiestrado y de acuerdo con las pautas del NEC y de los códigos locales.

La falla en tomar todas las precauciones y seguir todas las instrucciones de seguridad puede causar daños a la propiedad y lesiones serias, que pueden llegar hasta la muerte de usted o de otras personas.

A. Descripción.

Los modelos AMSF-25 y AMSS-25 de Federal Signal son altoparlantes redondos con una impedancia de 8 ohmios para servicio pesado, utilizados generalmente en servicios de amplificación pública o de llamadas a personas. Estos altoparlantes han sido diseñados para reproducir la gama completa de frecuencias usadas en la comunicación por voz. Ambos altoparlantes son fabricados de aluminio centrifugado. Las conexiones del altoparlante están contenidas bajo una cubierta, protegida contra el polvo y la humedad por un empaque. Todas las superficies externas están selladas con una pintura protectora de polvo de color gris metálico.

B. Especificaciones.

Frecuencias de operación:	800 Hz - 5 kHz
Capacidad de potencia:	25 Vatios
Impedancia nominal:	8 ohmios

	AMSF-25	AMSS-25
Anchura:	7,25" (18,4 cm)	6,25" (15,9 cm)
Altura:	-	8,4" (21,3 cm)
Profundidad [sin cubierta]:	4,1" (10,4 cm)	4,1" (10,4 cm)
Profundidad [con cubierta]:	5,0" (12,7 cm)	5,1" (12,9 cm)
Peso de embarque:	5,5 lbs (2,7 kg)	6,0 lbs (2,5 kg)

C. Forma de desempacar la unidad.

Después de desempacar la unidad, examínela para ver si tiene algún daño ocurrido durante el tránsito. Si el equipo se ha dañado, no trate de instalarlo ni de operarlo. Presente una reclamación inmediatamente ante la compañía transportadora, indicando la naturaleza y extensión del daño. Inspeccione cuidadosamente todos los sobres, etiquetas y otros documentos de embarque antes de quitarlos del equipo o destruirlos.

D. Montaje.

PRECAUCIÓN

La selección del lugar de montaje para la unidad, sus controles y la ruta para sus cables, deberá ser hecha bajo la dirección del ingeniero de planta y del ingeniero de seguridad.

Modelo AMSF-25

El altoparlante modelo AMSF-25 ha sido diseñado para montaje al ras. El altoparlante tiene seis agujeros de montaje de aproximadamente 0,22" (5,6 mm) de diámetro en su borde exterior. Vea la Figura 1. Instale el altoparlante detrás de un agujero de 6-1/8" (155,6 mm) de diámetro. Se recomienda aplicar una pequeña cantidad de silicona rtv, alrededor del borde exterior, cuando se instale este altoparlante dentro de una caja con clasificación NEMA 4X. Los herrajes necesarios para montar el altoparlante deberán ser suministrados por el instalador. La cubierta exterior (vea la Figura 2) está equipada con un dispositivo de alivio de tensión para el cable, que también evita la entrada de líquidos. Este dispositivo puede acomodar cables con diámetros entre 0,18" (4,6 mm) y 0,31" (7,9 mm). Instale la cubierta en forma segura al altoparlante, usando los fijadores suministrados.

Modelo AMSS-25

El altoparlante modelo AMSS-25 está equipado con un brazo giratorio de montaje que tiene una tuerca de presión y permite que el altoparlante pueda ser ajustado en un ángulo de hasta 90°. El brazo de montaje del altoparlante se puede montar sobre cualquier superficie rígida y relativamente plana. La base del brazo de montaje tiene tres agujeros. Vea la Figura 3. Los herrajes necesarios para montar el altoparlante deberán ser suministrados por el instalador. La cubierta exterior (vea la Figura 2) está equipada con un dispositivo de alivio de tensión para el cable, que también evita la entrada de líquidos. Este dispositivo puede acomodar cables con diámetros entre 0,18" (4,6 mm) y 0,31" (7,9 mm). Instale la cubierta en forma segura al altoparlante, usando los fijadores suministrados.

ADVERTENCIA

Esta unidad es pesada y se debe montar sobre una superficie rígida que sea capaz de soportar el peso del altoparlante.

E. Conexiones eléctricas.

ADVERTENCIA

No conecte los alambres mientras la electricidad esté conectada.

Los alambres de audio deben tener un tamaño adecuado, que deberá ser determinado por el electricista licenciado a cargo de la instalación, para el tipo de servicio deseado. Conecte el alambre positivo (+) de audio al terminal que tiene el indicador rojo.

ADVERTENCIA

Este altoparlante es una unidad de 8 ohmios y no debe ser conectado a una línea de 25 Voltios r.m.s. o de 70 Voltios r.m.s. sin el uso de un transformador reductor de voltaje. La falla en seguir estas instrucciones puede resultar en daños a la propiedad, lesiones serias, o hasta la muerte para usted o para otras personas.

F. Servicio.

PRECAUCIÓN

Cualquier trabajo de mantenimiento deberá ser llevado a cabo por un electricista adiestrado de acuerdo con las pautas del NEC y los códigos locales.

Federal Signal le dará servicio a su equipo o le suministrará asistencia técnica con cualquier problema que no pueda ser resuelto localmente.

Cualquier unidad devuelta a Federal Service para recibir servicio, inspección o reparación deberá estar acompañada de una Autorización para Devolución de Material (R.M.A. son las siglas en inglés). Esta R.M.A. se puede obtener de su distribuidor local o de un representante del fabricante.

Se deberá incluir una breve explicación del servicio solicitado o de la naturaleza del problema.

Dirija todas las comunicaciones y embarques a:

FEDERAL SIGNAL CORPORATION
Electrical Products Division (División de productos eléctricos)
Service Department (Departamento de servicio)
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTRUCTIONS DE MONTAGE ET D'ENTRETIEN POUR LES MODÈLES AMSF-25 ET AMSS-25

MESSAGE DE SÉCURITÉ AUX INSTALLATEURS, UTILISATEURS ET PERSONNES CHARGÉES DE L'ENTRETIEN

Il est important de suivre toutes les instructions qui accompagnent ce produit. Ce dispositif doit être installé par un électricien de métier qui connaît parfaitement le code électrique national et doit suivre les directives du C.N.E. ainsi que les codes locaux en vigueur.

Le choix de l'emplacement de montage de ce dispositif, de ses commandes et du passage de câble doit être établi sous la direction de l'ingénieur de l'installation et de l'ingénieur de la sécurité. En outre, il faut suivre les instructions de sécurité et les précautions indiquées ci-dessous :

- Ceci n'est pas un dispositif de sécurité enregistré et il n'est pas censé être employé comme tel.
- Il faut lire et comprendre toutes les instructions avant d'installer et de faire fonctionner cet équipement.
- Coupez l'électricité avant de connecter ou de faire l'entretien de ce dispositif.
- Tous les haut-parleurs de sécurité efficaces produisent des sons forts qui, dans certaines situations, peuvent provoquer une surdité permanente. Il faut prendre les précautions nécessaires comme le port de dispositif de protection antibruit.
- Tous les haut-parleurs de sécurité efficaces produisent des sons forts qui, dans certaines situations, peuvent provoquer une surdité permanente. Ce dispositif doit être installé suffisamment loin des auditeurs possibles pour limiter leur exposition tout en assurant le maintien de son efficacité. Le code OSHA du règlement fédéral 1910.95 sur les normes antibruit donne des directives qui peuvent être employées pour déterminer les niveaux admissibles d'exposition au bruit.
- Une fois que les essais sont terminés, donnez une copie de cette feuille d'instructions à tous les employés de service.
- Établissez une procédure pour vérifier régulièrement l'installation du haut-parleur, son intégrité et son bon fonctionnement. Tout l'entretien doit être effectué par un électricien de métier selon les directives de C.N.E. et les codes locaux en vigueur.

Le non-respect des précautions et instructions de sécurité peut provoquer des dégâts matériels, des blessures personnelles ou même de mort pour vous ou des tiers.

A. Description.

Les modèles AMSF-25 et AMSS-25 de Federal Signal sont des haut-parleurs ronds, d'usage industriel, de 8 ohms, pour les systèmes de sonorisation ou d'annonce. Ces haut-parleurs sont conçus pour reproduire toute la gamme des communications parlées. Tous deux sont construits en aluminium repoussé. Toutes les connexions de câblage des haut-parleurs sont placées dans un boîtier arrière avec joint étanche aux poussières et à l'humidité. Toutes les surfaces extérieures sont scellées par de la peinture gris métallique à revêtement poudre.

B. Spécifications.

Caractéristiques de fréquence : 800 – 5k Hz
Puissance admissible : 25 watts
Impédance nominale : 8 ohms

	AMSF-25	AMSS-25
Largeur :	18,4 cm (7,25 po)	15,9 cm (6,25 po)
Hauteur :	-	21,3 cm (8,4 po)
Profondeur [sans couvercle] :	10,4 cm (4,1 po)	10,4 cm (4,1 po)
Profondeur [sans couvercle] :	12,7 cm (5 po)	12,9 cm (5,1 po)
Pois brut :	2,5 kg (5,5 lb)	2,7 kg (6 lb)

C. Déballage.

Après le déballage, examinez l'unité et vérifiez qu'il n'y a pas eu de dégâts pendant le transport. Si l'équipement a été endommagé, n'essayez pas de l'installer ou de le faire fonctionner. Déposez une réclamation immédiatement auprès du transporteur indiquant l'étendue des dégâts. Vérifiez attentivement toutes les enveloppes et étiquettes d'expédition avant de les enlever et de les détruire.

D. Montage.

ATTENTION

Le choix de l'emplacement de montage de ce dispositif, de ses commandes et du passage de câble doit être établi sous la direction de l'ingénieur de l'installation et de l'ingénieur de la sécurité.

Modèle AMSF-25

Le haut-parleur AMSF-25 est destiné à un montage encastré. Il y a six trous de montage d'un diamètre d'environ 5,6 mm (0,22 po) dans le rebord extérieur. Voir figure 1. Installez le haut-parleur derrière un trou de 155,6 mm (6-1/8 po). Il est recommandé de mettre un peu de silicone RTV sur le rebord extérieur si l'unité est installée dans un coffret NEMA 4X. Le matériel de montage des haut-parleurs sera fourni par l'installateur. Le couvercle arrière (voir figure 2) est équipé d'un serre-câble étanche. Ce serre-câble convient pour des diamètres allant de 4,6 mm (0,18 po) à 7,9 mm (0,31 po). Fixez bien le couvercle au haut-parleur à l'aide des attaches fournies.

Modèle AMSS-25

Le haut-parleur AMSS-25 est équipé d'un support de montage à rotule dentelée avec un écrou de serrage qui permet d'ajuster le haut-parleur sur 90°. Le support de montage du haut-parleur est destiné à être monté sur une surface relativement plate et rigide. Il y a trois trous de montage dans la base du support. Voir figure 3. Le matériel de montage des haut-parleurs sera fourni par l'installateur. Le couvercle arrière (voir figure 2) est équipé d'un serre-câble étanche. Ce serre-câble convient pour des diamètres allant de 4,6 mm (0,18 po) à 7,9 mm (0,31 po). Fixez bien le couvercle au haut-parleur à l'aide des attaches fournies.

MISE EN GARDE

Cette unité est lourde et doit être montée sur une surface rigide qui peut supporter le poids du haut-parleurs.

E. Connexions électriques.

MISE EN GARDE

Ne connectez pas les fils sous tension.

Les fils audio doivent être d'une taille suffisante qui sera déterminée par l'électricien de métier chargé de l'installation. Connectez le fil audio positif (+) au terminal avec l'indicateur rouge.

MISE EN GARDE

Ce haut-parleur est un dispositif de 8 ohms et ne doit pas être connecté à un fil de 25 ou 70 VRMS sans emploi d'un transformateur réducteur de tension. Le non-respect des précautions et instructions de sécurité peut provoquer des dégâts matériels, des blessures personnelles ou même de mort pour vous ou des tiers.

F. Entretien.

ATTENTION

Tout l'entretien doit être effectué par un électricien de métier selon les directives de C.N.E. et les codes locaux en vigueur.

Si vous avez des problèmes qui ne peuvent être résolus localement, Federal Signal fera l'entretien de votre équipement et vous apportera une assistance technique.

Toutes les unités renvoyées à Federal Signal pour entretien, inspection ou réparation doivent être accompagnées d'une autorisation de renvoi du matériel. Vous pouvez obtenir cette autorisation auprès de votre distributeur local ou du représentant du fabricant.

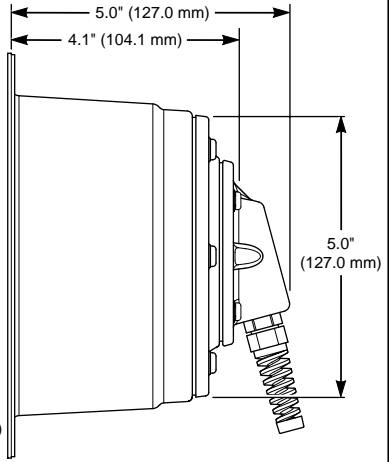
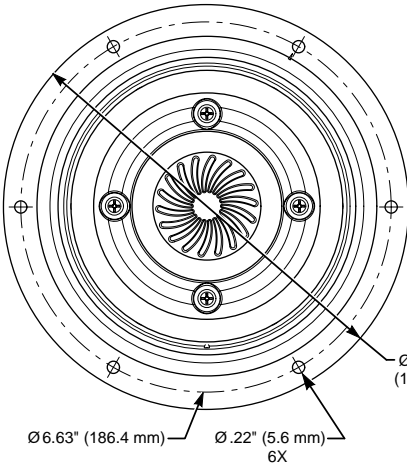
Il faudra donner une brève explication du service demandé ou de la nature de la panne.

Envoyez toutes communications et expéditions à :

FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

1

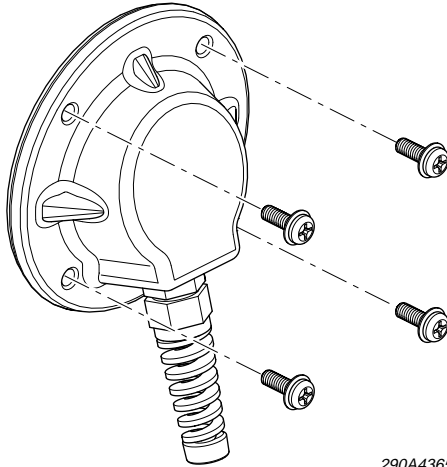
MODEL AMSF-25
MODELO AMSF-25
MODELE AMSF-25



290A4364

2

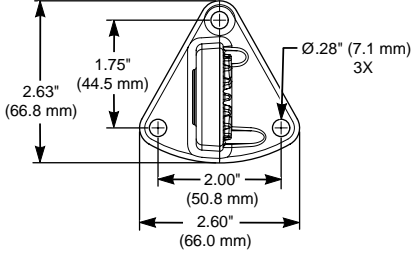
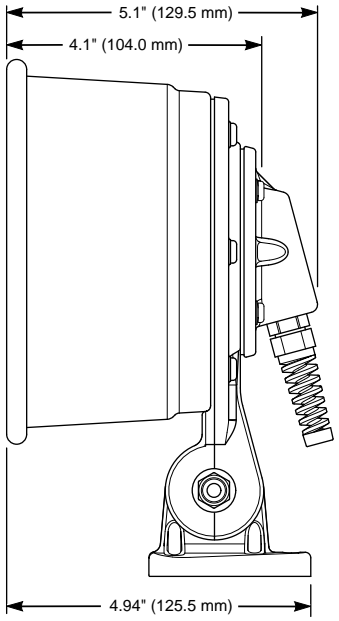
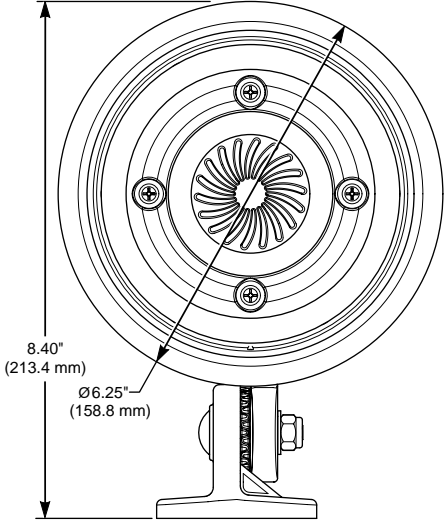
REAR COVER
CUBIERTA POSTERIOR
COUVERCLE ARRIÈRE



290A4365

3

MODEL AMSS-25
MODELO AMSS-25
MODELE AMSS-25



290A4366

MODEL AM30

**INSTALLATION AND SERVICE INSTRUCTIONS FOR
MODEL AM30 SPEAKER**

MODELO AM30

**INSTRUCCIONES PARA LA INSTALACIÓN Y EL MANTENIMIENTO DEL
PARLANTE MODELO AM30**

MODELE AM30

**INSTRUCTIONS D'INSTALLATION ET D'ENTRETIEN OU RÉPARATION
POUR LE HAUT-PARLEUR DE MODÈLE AM30**

Address all communications and shipments to:

Dirija todas la correspondencia y envíos a:

Adressez toutes les communiations et expéditions à:



FEDERAL SIGNAL CORPORATION

Electrical Products Division

2645 Federal Signal Drive

University Park, IL 60466-3195

INSTALLATION AND SERVICE INSTRUCTIONS FOR MODEL AM30 SPEAKER

SAFETY MESSAGE TO INSTALLERS, USERS AND MAINTENANCE PERSONNEL

It is important to follow all instructions shipped with this product. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electrical Code and will follow NEC Guidelines as well as local codes.

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the facilities engineer and the safety engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- This is not a Listed safety device and is not intended to be used as such.
- Read and understand all instructions before installing or operating this equipment.
- Disconnect power before connecting or doing any maintenance on this device.
- All effective warning speakers produce loud sounds which may cause in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- After testing is complete, provide a copy of this instruction sheet to all operating personnel.
- Establish a procedure to routinely check the speaker installation for integrity and proper operation. Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

A. Description.

The Federal Signal Model AM30 is a conservatively rated 30-watt constant-directivity paging projector for use in any public address or paging application.

The driver employs a rugged phenolic diaphragm, 1.5-inch diameter voice coil, and "rim centered" ferrite magnet structure for long life and durability under extreme operating conditions.

A 12-inch connecting cable, phased and color coded, is provided for connecting to the AM30.

A nominal 60° horizontal by 40° vertical coverage pattern together with a low-frequency cutoff of 350 Hz provides excellent articulation in demanding applications.

The AM30 is molded from high-impact ultraviolet inhibiting ASA (acrylic styrene acrylonitrile). A positive lock super tough nylon swivel base provides maximum mounting flexibility and ease of installation.

Ideal for both indoor and outdoor applications, these drivers are well suited for any installation requiring rugged, reliable performance.

B. Model AM30 Specifications.

Frequency Response:	400-6500Hz \pm 5 dB
Power Handling:	30 watts
Impedance:	
Nominal	8 ohms
Minimum, above 500 Hz	6.5 ohms (650Hz)

Sound Pressure Level @ 1 meter:	107 dB, 1 watt input averaged, pink noise band-limited from 500 to 5000Hz
Horizontal Beamwidth:	60° @ 2.0 kHz
Vertical Beamwidth:	40° @ 2.0 kHz
Directivity Factor Rq (Q):	15.9 @ 2.0 kHz
Usable Low-Frequency Limit:	350 Hz
Construction:	High-impact, acrylic styrene acrylonitrile (ASA) with ultraviolet light inhibiting mesa tan finish. Positive-lock super tough nylon swivel base.
Weight:	
Shipping	3.8 lbs. (1.7 kg)
Net	3.0 lbs. (1.4 kg)
Housing Dimensions:	
Width	12.1" (30.7 cm)
Height	8.9" (22.6 cm)
Depth	12.2" (31.0 cm)

C. Unpacking.

After unpacking the Model AM30, examine it for damage that may have occurred in transit. If the equipment has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

D. Mounting.

CAUTION

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the facilities and the safety engineer.

The speaker is intended to be mounted on any relatively flat and rigid surface. Hardware for mounting the speaker to the surface is left up to the installer.

Mounting to wall, ceiling, or to electrical boxes is accomplished without the need of adding a steel plate to the base. Bonding straps may be used for mounting to beams. Mounting holes in the base should be knocked through as needed.

WARNING

This unit is heavy and should be mounted on a rigid surface capable of supporting the weight of the speaker.

E. Electrical Connections.

WARNING

Do not connect wires when power is applied.

NOTE

Audio wires should be sized properly by your licensed installation electrician for your service application. This cable requires a twisted shielded pair with an 18AWG minimum and should produce no more than 15% signal loss over the length of the cable run.

Connect the positive (+) audio line to the white wire with the red indicator and the negative (-) audio line to the white wire.

WARNING

This speaker is an 8-ohm device and should not be connected to a 25 VRMS or a 70 VRMS line without the use of a step-down transformer. Failure to follow these instructions may result in property damage, serious injury, or death to you or others.

F. Service.

CAUTION

Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization. This R.M.A can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION

Electrical Products Division

Service Department

2645 Federal Signal Drive

University Park, IL 60466-3195

INSTRUCCIONES PARA LA INSTALACIÓN Y EL MANTENIMIENTO DEL PARLANTE MODELO AM30

MENSAJE DE SEGURIDAD PARA LOS INSTALADORES, USUARIOS Y PERSONAL

DE MANTENIMIENTO

Es importante seguir las instrucciones enviadas con este producto. Este dispositivo debe ser instalado por un electricista calificado que esté familiarizado con el Código Nacional Eléctrico y siga las instrucciones así como los códigos locales.

La selección del sitio de montaje del dispositivo, sus controles y la ruta de alambrado, se hará bajo la dirección del Ingeniero de Facilidades y el Ingeniero de Seguridad. Sin embargo, a continuación se listan algunas otras instrucciones y precauciones de seguridad que se deben seguir:

- Este no es un dispositivo de seguridad para área peligrosa y no fué creado para tal fin.
- Lea y comprenda todas las instrucciones antes de instalar u operar este equipo.
- Desconecte la energía antes de conectar o hacer cualquier mantenimiento a este dispositivo.
- Todos los parlantes de prevención efectivos producen sonidos fuertes, que pueden causar en ciertas ocasiones, pérdida permanente del oído y se deben tomar las debidas precauciones tales como usar protectores auditivos.
- Todos los parlantes de prevención efectivos producen sonidos fuertes, que pueden causar pérdida permanente del oído. El dispositivo debe ser instalado bastante lejos de los oyentes potenciales como para limitar su exposición. El código OSHA de Regulaciones Federales (EEUU) 1910.95 sobre el ruido, debe ser usado para establecer la permisibilidad del nivel de exposición al ruido.
- Después de completar la prueba, entregue una copia de estas instrucciones a todo el personal de operación.
- Establezca un procedimiento rutinario para probar la integridad y operación apropiada del altoparlante. Cualquier mantenimiento debe ser realizado por un electricista entrenado siguiendo las normas NEC y los códigos locales.

El no seguir de todas las instrucciones y precauciones de seguridad, puede provocar daños a la propiedad, lesiones severas y aún su muerte o la de otros.

A. Descripción.

El Modelo AM30 de Federal Signal es una corneta para llamadas, de direccionalidad constante, capaz de entregar 30-watiosal mínimo para llamadas o anuncios al público.

La parte activa usa un diafragma fenólico de trabajo pesado, bobina de 1,5" e imán de ferrita de estructura de "corona centrada" para larga vida y durabilidad bajo condiciones de operación extremas.

Un cable de 12", polarizado y marcado con colores, se provee para conectar al AM30.

Una cobertura nominal de 60° horizontal por 40° vertical junto con un corte de frecuencia a 350Hz da una excelente articulación en aplicaciones exigentes.

El AM30 es moldeado con ASA (estireno acrílico de acrilonitrilo) de alto impacto con inhibición de rayos ultravioleta. Una base giratoria super fuerte de bloqueo positivo provee máxima flexibilidad de montaje y facilidad de instalación.

Estas cornetas son ideales para uso en intemperie e interiores; convenientes para cualquier aplicación que requiera un desempeño confiable de trabajo pesado.

B. Especificaciones del Modelo AM30.

Respuesta de frecuencia:	400-6500Hz aprox ± 5 dB
Potencia que maneja:	30vatios

Impedancia	
Nominal	8 Ohm
Mínimo sobre 500 Hz	6,5 Ohm (650 Hz)
Nivel de presión de sonido @ a 1 metro:	107dB, 1 vatio entrada promedio, ruido rosado limitado a la banda de 500 a 5000Hz
Angulo de cobertura horizontal:	60° @ 2,0kHz
Angulo de cobertura vertical:	40° @ 2,0kHz
Factor de direccionalidad Rq(Q):	15,9 @ 2,0kHz
Límite de baja frecuencia:	350Hz
Construcción:	Estireno acrílico de acrilonitrilo (ASA) de alto impacto, con inhibición a la luz ultravioleta, acabado bronce de mesa y base giratoria de nylon super fuerte de bloqueo positivo.
Peso	
De embarque	3,8 lbs (1,7kg)
Neto	3,0 lbs (1,4 kg)
Dimensiones de la caja	
ancho	12,1" (30,7 cm)
alto	8,9" (22,6 cm)
profundidad	12,2" (31,0 cm)

C. Desempaque.

Después de desempacar la unidad AM30, examine cuidadosamente si hay daños de transporte. Si hubo daños, no intente instalarla u operarla. Haga el reclamo inmediatamente al transportador estableciendo el monto del daño. Revise con cuidado todas las envolturas, sellos de embarque y etiquetas antes de removerlas o destruirlas.

D. Montaje.

PREVENCION

La selección del sitio de montaje del dispositivo, sus controles y la ruta de alambrado, se harán bajo la dirección del Ingeniero de las Facilidades y del Ingeniero de Seguridad.

El parlante se montará en una superficie relativamente rígida y plana. El instalador suministrará los soportes adecuados para el montaje del parlante en la superficie.

El montaje a pared, techo o cajas eléctricas, se hace sin necesidad de adicionar una placa de acero a la base. Se pueden usar correas para el montaje a una viga. Se pueden hacer huecos de montaje en la base, cuando sea necesario.

PRECAUCION

Esta unidad es pesada y debe ser montada en una superficie rígida capaz de soportar el peso del parlante.

E. Conexiones Eléctricas.

PRECAUCION

No conecte cables cuando haya corriente eléctrica.

NOTA

Los cables de audio deben tener el tamaño correcto seleccionado por un electricista instalador autorizado para su aplicación de servicio. Este cable requiere un par trenzado blindado con un cable calibre 18AWG como mínimo y debe producir menos de 15% de pérdida de señal a lo largo del tramo del cable.

Conecte la línea positiva de audio (+) al cable blanco con marca roja y la línea negativa de audio (-) al cable blanco.

PRECAUCION

Este parlante es un aparato de 8 Ohm y no se debe conectar a una línea de 25 V RMS o de 70 V RMS sin el uso de un transformador reductor. La falla en seguir estas instrucciones puede acarrear daños a la propiedad, heridas serias, o su muerte o la de otros.

F. Servicio.

PREVENCION

Cualquier mantenimiento debe ser hecho por un electricista entrenado que esté familiarizado con el NEC y siga sus instrucciones y los códigos locales.

Federal Signal le hará servicio a su equipo o proveerá asistencia técnica con cualquiera de los problemas que no puedan ser manejados localmente.

Cualquier unidad que se devuelva a Federal Signal para servicio, inspección o reparación, debe acompañarse de una autorización de "material devuelto" (R.M.A.). Esta R.M.A. se puede obtener con el representante o distribuidor local del fabricante y se adjuntará una breve explicación de la necesidad del servicio o la naturaleza del mal funcionamiento.

Dirija todas las comunicaciones y envíos a:

FEDERAL SIGNAL CORPORATION

Electrical Products Division

Service Department

2645 Federal Signal Drive

University Park, IL 60466-3195

INSTRUCTIONS D'INSTALLATION ET D'ENTRETIEN OU RÉPARATION POUR LE HAUT-PARLEUR DE MODÈLE AM30

MESSAGE DE SECURITE AUX INSTALLATEURS, UTILISATEURS ET PERSONNEL D'ENTRETIEN

Il est important de respecter toutes les instructions expédiées avec ce produit. Ce dispositif doit être installé par des électriciens professionnels qui sont complètement au courant du Code Electrique National et respecteront les recommandations NEC ainsi que les codes locaux.

Le choix de l'endroit de montage du dispositif, de ses commandes et du passage des câbles doit être effectué sous la direction de l'ingénieur des services électriques et de l'ingénieur de sécurité. De plus, sont énumérées ci-dessous quelques autres instructions et précautions de sécurité importantes que vous devez suivre:

- Ceci n'est pas un dispositif de sécurité classé et n'est pas destiné à être utilisé comme tel.
- Lire et comprendre toutes les instructions avant d'installer ou d'utiliser ce matériel.
- Déconnectez l'alimentation avant de connecter ou de faire de l'entretien sur ce dispositif.
- Tous les haut-parleurs effectifs d'avertissement produisent des sons puissants qui peuvent causer dans certaines situations une perte permanente de l'ouïe. Vous devez prendre des précautions appropriées comme le port de protection de l'ouïe.
- Tous les haut-parleurs d'avertissement effectifs produisent des sons forts qui peuvent causer dans certaines situations la perte définitive de l'ouïe. Le dispositif doit être installé suffisamment loin des auditeurs potentiels pour limiter leur exposition tout en maintenant son efficacité. Le code OSHA de Federal Regulations 1910.95 (Norme de bruit) donne des recommandations qui peuvent être utilisées concernant les niveaux d'exposition au bruit permis.
- Après fin de l'essai, donnez un exemplaire de cette feuille d'instructions à tout le personnel utilisateur.
- Etablissez une procédure pour vérifier régulièrement le système sonore concernant son actionnement et son fonctionnement. L'entretien doit être exécuté par un électricien professionnel conformément aux recommandations NEC et aux codes locaux.

Si on ne respecte pas ces précautions de sécurité, il peut en résulter des dommages aux biens, des blessures graves ou mortelles pour vous ou d'autres.

A. Description.

Le Modèle AM30 de Federal Signal est un cornet de sonorisation à facteur de directivité constante de valeur nominale conservative 30 watts pour utilisation dans des applications de sonorisation ou de recherche par haut-parleur.

Le driver utilise une membrane phénolique solide, une bobine vocale de diamètre 1,5" et une structure magnétique en ferrite "centrée" pour permettre une longue durée et durabilité dans des conditions de fonctionnement extrêmes.

Un câble phasé et codé en couleur 12" est prévu pour connecter au AM30.

Un mode nominal de couverture horizontal 60° et vertical 40° ainsi qu'une coupure basse fréquence à 350Hz donne une articulation excellente pour des applications difficiles.

Le AM30 est moulé en ASA arrêtant les ultraviolets, résistant à de gros chocs (acrylique styrène acrylonitrile). Une base pivotante en Nylon super-dure à verrouillage positif permet une souplesse maximale de montage et facilite l'installation.

Idéal pour des applications intérieures et extérieures, ce cornet convient bien à toute application nécessitant des performances solides et fiables.

B. Specifications du Modele AM30.

Réponse fréquence

400-6500Hz \pm 5 dB

Capacité en puissance	30 watts
Impédance:	
Nominale	8 ohms
Minimale au-dessus de 500 Hz	6,5 ohms (650 Hz)
Niveau de pression acoustique @ 1 mètre:	107 dB, 1 watt d'entrée en moyenne, limitation de bande bruit rose de 500 à 5000 Hz
Largeur de faisceau horizontal	60° @ 2,0 kHz
Largeur de faisceau vertical	40° @ 2,0 kHz
Facteur directif R _q (Q)	15,9 @ 2,0 kHz
Limite utilisable basse fréquence:	350Hz
Construction:	ASA (acrylique styrène acrylonitrile) à résistance élevée aux chocs avec arrêt des rayons ultraviolets, à finition mesa tan. Base à pivot Nylon, super solide à verrouillage positif.
Poids:	
Expédition	3,8 lbs (1,7 kg)
Net	3,0 lbs (1,4 kg)
Dimensions du carter:	
Largeur	12,1" (30,7 cm)
Hauteur	8,9" (22,6 cm)
Profondeur	12,2" (31,0 cm)

C. Déballage.

Après déballage du Modèle AM30, inspectez-le pour voir s'il a été endommagé pendant le transport. S'il a été endommagé, faites une déclaration immédiatement auprès du transporteur en indiquant les dommages. Vérifiez soigneusement toutes les enveloppes, les étiquettes d'expédition et les étiquettes volantes avant de les retirer ou les détruire.

D. Montage.

ATTENTION

La sélection de l'endroit de montage du dispositif, de ses commandes et du passage des câbles doit être effectuée sous la direction de l'ingénieur des services électriques et l'ingénieur de sécurité.

Le haut-parleur est destiné à être monté sur une surface relativement plate et rigide. La quincaillerie pour le montage du haut-parleur sur la surface est sous la responsabilité de l'installateur.

Le montage sur mur, plafond, ou sur boîtiers électriques est fait sans besoin d'ajouter une plaque d'acier à la base. Des pattes de fixation peuvent être utilisées pour montage sur des poutres. Des trous de montage dans la base doivent être chassés selon besoin.

AVERTISSEMENT

Cette unité est lourde et doit être montée sur une surface rigide capable de supporter le poids du haut-parleur.

E. Connexions Électriques.

AVERTISSEMENT

Ne connectez pas les fils si la tension n'est pas coupée.

NOTE

Les fils audio doivent être choisis par votre électricien d'installation agréé pour votre application de service. Ce câble exige une paire de fils torsadés et blindés d'un minimum de 18AWG et devrait produire au plus une perte de signal de 15% sur la longueur du câble.

Connectez la ligne positive audio (+) au fil blanc avec indicateur rouge et la ligne audio négative (-) au fil bleu.

AVERTISSEMENT

Le haut-parleur est un dispositif de 8 ohms et ne doit pas être connecté à une ligne 25 VRMS ou à 70 VRMS sans utiliser un transformateur abaisseur de tension. Si ces instructions ne sont pas suivies, il peut en résulter des dommages aux biens, des blessures graves ou mortelles pour vous ou d'autres.

F. Service.

ATTENTION

Tout entretien doit être exécuté par un électricien entraîné conformément aux recommandations NEC et aux codes locaux.

L'usine de Federal Signal fera le service de votre matériel et fournira une assistance technique pour tout problème qui ne puisse être traité localement.

Toutes les unités renvoyées à Federal Signal pour un service, inspection ou réparation doivent être accompagnées d'une autorisation de retour de matériel. Cette R.M.A. peut être obtenue auprès du distributeur local ou du représentant du fabricant.

A ce moment, une courte explication du service demandé, ou la nature du mauvais fonctionnement doit être donnée.

Adressez toutes les communications et expéditions à:

FEDERAL SIGNAL CORPORATION

Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195



INSTALLATION INSTRUCTIONS FOR MODEL AM302 and AM302GCX AUDIOMASTER® SPEAKER

WARNING

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

SAFETY MESSAGE TO INSTALLERS

Peoples lives depend on your safe installation of our products. It is important to follow all instructions shipped with the products. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electric Code and will follow the NEC guidelines as well as local codes.

The selection of the mounting location for the device, its controls and routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this equipment.
- This unit must be installed by a qualified electrician in accordance with National and local Electrical Codes, under the direction of the authority having jurisdiction.
- Do not connect this unit to the system when power is on.
- All effective warning speakers produce loud sounds which may cause, in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- After installation, test the sound system to ensure proper operation.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- Show these instructions to your Safety Engineer and then file them in a safe place and refer to them when maintaining and/or reinstalling the unit.
- After installation and completion of initial system test, a program for periodic testing of this device must be established. Refer to the authority having jurisdiction for this information.
- Consult the authority having jurisdiction in your area regarding the proper use and installation of this product.

I. GENERAL.

The AudioMaster Model AM302 and AM302GCX are 25 Vrms and 70 Vrms, indoor/outdoor rated, selectable power output (7 to 30 watts) loudspeakers for use with general utility signaling systems such as Federal Signal's SelecTone system. They are designed to reproduce electronically generated warning tones, which command rapid recognition, and full range voice communication. They are suitable for use in areas with high ambient noise

levels. The speaker projector is adjustable and may be repositioned to obtain desired sound distribution.

The AM302GCX is suitable for use in Class I, Groups A, B, C, & D, Division 2; Class II, Groups F & G, Division 2; and Class III Hazardous (Classified) Locations.

II. SPECIFICATIONS.

Operating Voltage	25 Vrms or 70 Vrms
Power Input (selectable)	7 W, 15 W, and 30 W
Weight (approx.)	7 lb. (3.2kg)
Size	14" (356mm) high, 10" (254mm) wide, 11" (279mm) deep.
Construction	Aluminum enclosure painted with grey electrostatic powder coating. Amplifier housing sealed with neoprene rubber gasket.

Audibility information is shown in table 1.

III. INSTALLATION.

A. Unpacking.

After unpacking the speaker, examine it carefully for possible damage that may have occurred in transit. If equipment has been damaged, immediately file a claim with the carrier stating extent of damage. Carefully check all shipping labels and tags for special instructions before removing or destroying them.

B. Mounting Arrangements (see figure 1).

CAUTION

To maintain the hazardous location rating of the Model AM302GCX, do not use the 7/8" knockout (concealed conduit mounting).

The speaker can be mounted on any relatively flat surface. Conduit connection can be made to 1/2" threaded opening at bottom of housing or to 7/8" knockout in rear of housing. After the mounting location and mounting method have been selected, proceed with the applicable instructions below.

POWER TAP	SOUND LEVEL dB(A) @ 10' on axis
7 watt	104
15 watt	109
30 watt	112

Table 1. Power Tap Settings vx. Sound Output on Models AM302 and AM302GCX

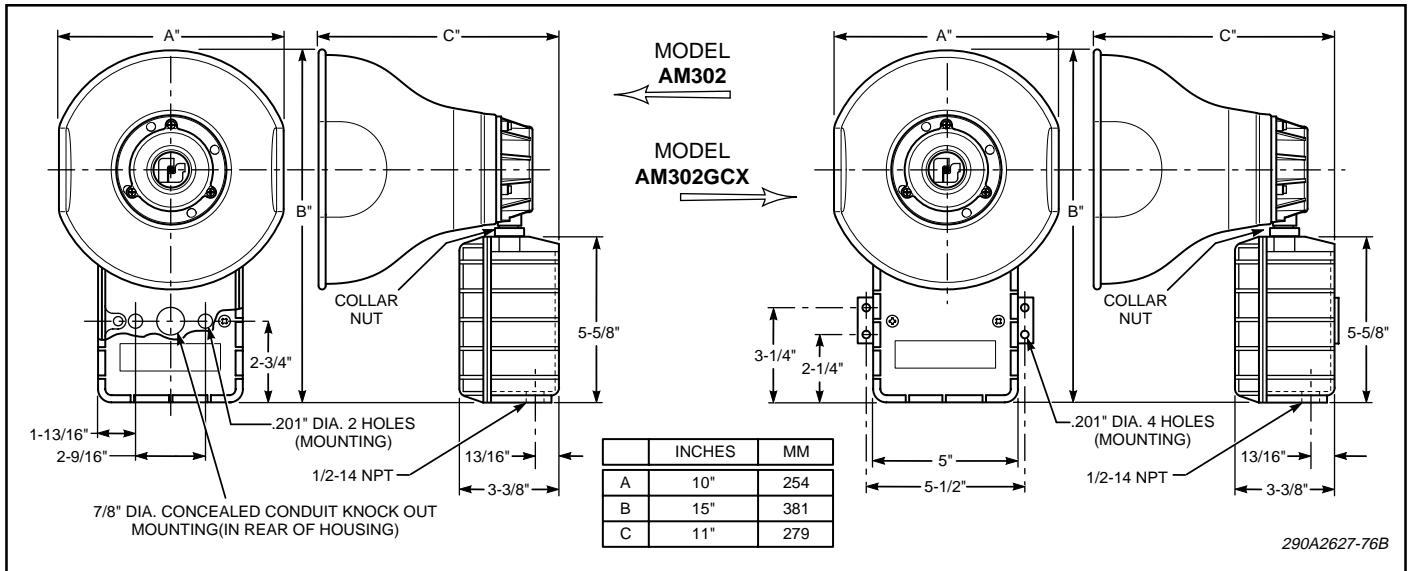


Figure 1. Models AM302 and AM302GCX Speaker Dimensions.

WARNING

Property damage, serious injury, or death could occur if an accumulation of water, snow, dust, etc. resides in the speaker projector, severely reducing or preventing operation of this device. Mount the unit so speaker projector is pointed horizontally or slightly downward.

1. Flat Surface Mounting.

- a. Remove and retain the two screws that secure cover to housing. Remove the cover.

WARNING

Property damage, serious injury, or death could occur if any objects are in front of speaker, severely reducing optimum sound distribution. For maximum effectiveness, ensure that the front of the speaker is clear of obstructions.

- b. Select the mounting location and place rear of housing against mounting surface.
- c. Using the mounting holes (two (2) inside the Model AM302's housing or four (4) in the AM302GCX's external mounting bracket) as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

CAUTION

Before drilling holes in any surface, ensure that both sides of surface are clear of items that could be damaged.

- d. Secure the unit to the mounting surface with #10 screws appropriate for the type of mounting surface material.

WARNING

Property damage, serious injury or death could occur if the projector is mishandled during installation or over time. DO NOT rotate the projector more than 180 degrees or internal speaker wiring may be damaged.

- e. Reposition speaker projector if necessary to obtain desired sound coverage. Loosen collar nut (see figure 1) and move projector to desired position.

- f. Before reinstalling the housing cover, read paragraph 4 in section C, Electrical Connections, and make the necessary electrical connections.

2. Model AM302 Concealed Conduit Mounting.

- a. Remove and retain the two screws that secure cover to housing. Remove the cover.
- b. Remove the 7/8" knockout at rear of housing.
- c. Install the conduit connection.

NOTE

If installation on an existing electrical box is desired, an optional Model CC adapter plate is required.

- d. Select the mounting location and place rear of housing against mounting surface.
- e. Using the two (2) mounting holes as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

CAUTION

Before drilling holes in any surface, ensure that both sides of surface are clear of items that could be damaged.

- f. Secure the unit to the mounting surface with #10 screws appropriate for the type of mounting surface material.

WARNING

Property damage, serious injury or death could occur if the projector is mishandled during installation or over time. DO NOT rotate the projector more than 180 degrees or internal speaker wiring may be damaged.

- g. Reposition speaker projector if necessary to obtain desired sound coverage. Loosen collar nut (see figure 1) and move projector to desired position.
- h. Before reinstalling the housing cover, read paragraph 4 in section C, Electrical Connections, and make the necessary electrical connections.

C. Electrical Connections.

DANGER

To avoid electrical shock, do not connect wires when circuits are energized.

WARNING

Audio wires should be sized properly by your licensed installation electrician for your service application. This cable requires a twisted shielded pair with an 18AWG minimum and should produce no more than 15% signal loss over the length of the cable run.

National Electrical Code as well as local codes must be adhered to in installation of these models. All electrical wiring must be routed through approved conduit and fittings.

1. See figures 2 and 3. Connect the audio common (-) leads to the speaker's common terminal.
2. Refer to figures 2 and 3. Connect the audio positive (+) leads to the 25V or 70V terminal, depending on the external signal source voltage.
3. The AM302 and AM302GCX are factory configured for 30 W operation. If a different wattage terminal is desired, remove the wire leading to the speaker from the terminal marked 30 W and connect it to the terminal marked 7 W or 15 W as indicated in figure 3.

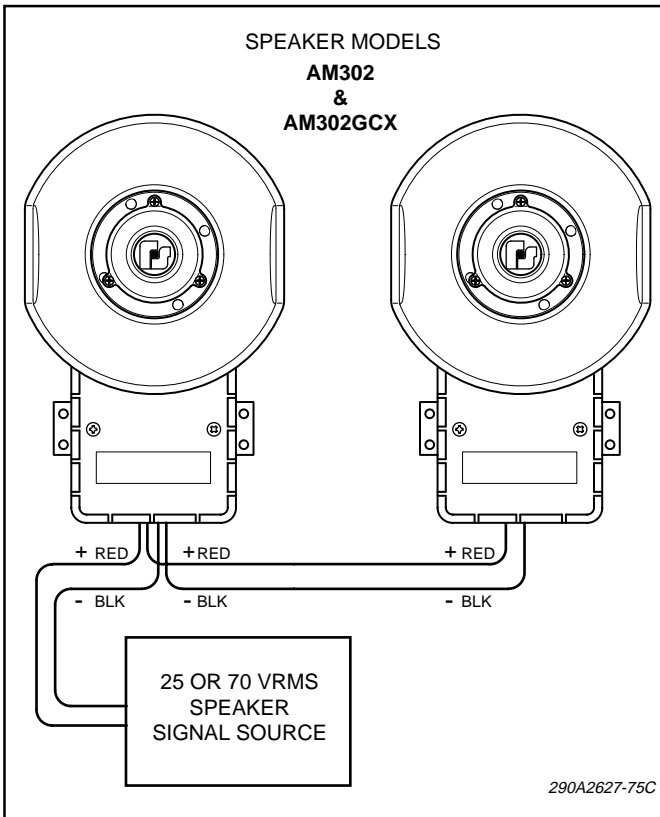


Figure 2. Typical Installation Wiring.

NOTE

Only three (3) of the five (5) wattage terminals marked on the terminal block are for use on the AM302 and AM302GCX. For proper operation, the speaker wire should be connected to one (1) of these terminals as indicated in figure 3. The remaining two (2) wattage terminals are not used.

4. Be sure the neoprene rubber cover gasket is properly seated in the housing groove and reinstall the housing cover.

WARNING

Property damage, serious injury or death could occur if the housing is not closed properly. To reduce the possibility of explosion, the Model AM302GCX's housing cover must be kept tight while circuits are energized.

IV. TESTING/OPERATING.

WARNING

Under certain conditions these devices are capable of producing sounds loud enough to cause hearing damage. Adequate hearing protection should be worn if standing within close proximity to device while testing. Recommendations in the OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.

- A. After installation is complete, be sure to test the system to verify that each speaker operates satisfactorily. If it is found that the unit is too loud for its location, a lower wattage tap may be selected. Carefully remove the housing cover and move the speaker internal yellow lead to a lower wattage tap (see Figure 3). Reinstall the housing cover and retest.

WARNING

Property damage, serious injury or death could occur if the housing is not closed properly. To reduce the possibility of explosion, the Model AM302GCX's housing cover must be kept tight while circuits are energized.

- B. After completion of initial system test, establish a program for periodic testing of this device. Refer to the authority having jurisdiction for this information.
- C. Provide a copy of these instructions for the Safety Engineer, system operator(s) and maintenance personnel.

SAFETY MESSAGE TO OPERATORS

Even if your warning system is operating properly, it may not be completely effective. People may not hear or heed your warning signal. You must recognize this fact and ensure that your warning signal achieves its intended effect through proper test/training sequences within your specific application(s).

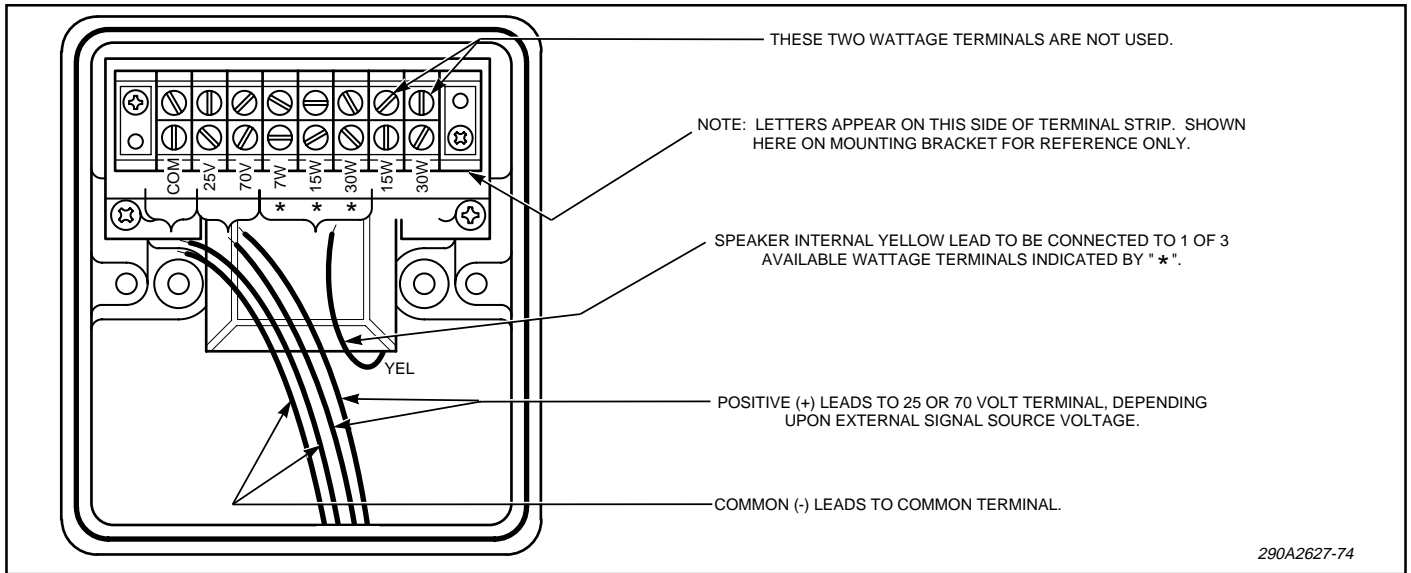


Figure 3. Internal Multi-tap Wiring Set-up.

V. MAINTENANCE.

SAFETY MESSAGE TO MAINTENANCE PERSONNEL

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

- Read and understand all instructions before performing maintenance on this unit.
- To reduce the risk of electrical shock, or ignition of hazardous atmospheres, do not perform maintenance or service on this unit when circuits are energized.
- Periodic checks should be made to ensure that effectiveness of this device has not been reduced because speaker has become clogged with a foreign substance or because objects have been placed in front of the speaker.
- Any maintenance to this unit **MUST** be performed by a trained electrician in accordance with NEC guidelines and local codes.
- Never alter this unit in any manner. Safety in hazardous locations may be jeopardized if additional openings or alterations are made to Model AM302GCX.
- The nameplates, which contain cautionary or other information of importance to maintenance personnel, should not be obscured if exterior of device is painted.

A. Periodically check this device to verify that there are no foreign substances in, or in front of, the speaker which will reduce its effectiveness.

B. Testing should be periodically performed. Refer to the authority having jurisdiction for information.

C. In the event a volume adjustment or other repair is required, be sure to refer to the Safety Message For Maintenance Personnel before proceeding.

VI. SERVICE.

WARNING

Unauthorized repair/servicing of the unit may result in degradation of performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair/retrofit of parts.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair, must be accompanied by a Return Material Authorization. This R.M.A. can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION
 Electrical Products Division
 Service Department
 2645 Federal Signal Drive
 University Park, IL 60466-3195

MODEL AM100D

**INSTALLATION AND SERVICE INSTRUCTIONS FOR
MODEL AM100D DRIVER**

MODELO AM100D

**INSTRUCCIONES PARA LA INSTALACIÓN Y EL MANTENIMIENTO DEL
EXCITADOR MODELO AM100D**

MODÈLE AM100D

**INSTRUCTIONS D'INSTALLATION ET D'ENTRETIEN POUR LE
MODÈLE DE COMMANDE AM100D**

Address all communications and shipments to:
Dirija toda la correspondencia y todos los envíos a:
Adressez toutes les communications et expéditions à:



FEDERAL SIGNAL CORPORATION
Electrical Products Division
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTALLATION AND SERVICE INSTRUCTIONS FOR MODEL AM100D DRIVER

SAFETY MESSAGE TO INSTALLERS, USERS AND MAINTENANCE PERSONNEL

It is important to follow all instructions shipped with this product. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electrical Code and will follow NEC Guidelines as well as local codes.

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the facilities engineer and the safety engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- This is not a Listed safety device and is not intended to be used as such.
- Read and understand all instructions before installing or operating this equipment.
- Do not connect this unit to the system while the power is on.
- All effective warning speakers produce loud sounds which may cause in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- After installation, test the sound system to ensure proper operation.
- After testing is complete, provide a copy of this instruction sheet to all operating personnel.
- Establish a procedure to routinely check the speaker installation for integrity and proper operation. Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

A. Description.

The Federal Signal Model AM100D is a heavy-duty, 100-watt, compression driver for use in high-power public address installations.

The exterior is finished in durable, weatherproof paint and all metal parts have been tropicalized for resistance to high-humidity and fungus.

Ideal for both indoor and outdoor applications, these drivers are well suited for any installation requiring rugged, high-power performance.

B. Model AM100D Specification.

Power Handling:	100 watts
Impedance:	
Nominal	8 ohms
Sound Pressure Level @ 1 meter:	130 dBa*
Sound Pressure Level @ 10':	120 dBa*
Frequency Response:	300 - 3000 Hz
Construction:	Rugged die cast housing with weatherproof finish for outdoor use.
Mechanical Connection of Driver:	1-3/8"-18 thread, 1/2" long

* Pink noise band-limited from 400 to 4000 Hz using AM100H Horn.

Weight:	
Shipping	5.0 lbs.
Net	4.3 lbs.
Dimensions:	
Diameter	4.66"
Height	2.82"
Recommended Horn:	AM100H

C. Unpacking.

After unpacking the Model AM100D, examine it for damage that may have occurred in transit. If the equipment has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

D. Installation.

1. Position the supplied washer in the throat of the horn.
2. Screw the driver into the horn.

WARNING

This unit is heavy and should be mounted on a rigid surface capable of supporting the weight of the speaker.

3. Install the horn/driver assembly in intended location, referring to the instructions provided with the horn.
4. Route the speaker wiring to the horn/driver assembly.

WARNING

Do not connect wires when power is applied.

5. Connect the speaker wiring to the speaker wire leads.

CAUTION

When connecting multiple speakers, polarity **MUST** be maintained. Ensure that all red wires are connected to the same audio output lead, and that all black wires are connected to the same audio output lead.

E. Service.

CAUTION

Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

Do not perform maintenance on this device while the system power is on.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization. This R.M.A can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION
 Electrical Products Division
 Service Department
 2645 Federal Signal Drive
 University Park, IL 60466-3195

INSTRUCCIONES PARA LA INSTALACIÓN Y EL MANTENIMIENTO DEL EXCITADOR MODELO AM100D

MENSAJE DE SEGURIDAD PARA INSTALADORES, USUARIOS Y PERSONAL DE MANTENIMIENTO

Es importante seguir todas las instrucciones que vienen con este producto. Este dispositivo debe ser instalado por un electricista capacitado que conozca perfectamente el Código Eléctrico Nacional y siga todas las Directrices del Código NEC así como los códigos locales.

La selección del lugar de montaje para el dispositivo, sus controles y la distribución del cableado debe realizarse bajo la dirección del ingeniero de planta y el ingeniero de seguridad. Además, a continuación indicamos algunas otras instrucciones importantes y precauciones de seguridad que usted debe seguir:

- Este dispositivo no es un aparato aprobado de seguridad y no debe usarse como tal.
- Lea y comprenda todas las instrucciones antes de instalar o poner a funcionar este equipo.
- No conecte esta unidad al sistema mientras esté recibiendo energía eléctrica.
- Todos los altavoces eficaces de alarma producen sonidos fuertes que pueden causar, en ciertas situaciones, la pérdida permanente de la audición. Usted debe tomar las precauciones apropiadas como, por ejemplo, usar protección para los oídos.
- Todos los altavoces eficaces de alarma producen sonidos fuertes que pueden causar, en ciertas situaciones, la pérdida permanente de la audición. Este dispositivo debe instalarse a suficiente distancia de los posibles escuchantes para limitar su exposición sin perder por ello su eficacia. El Código de Reglamentos Federales de la OSHA en su Norma sobre ruidos 1910.95 estipula las directrices que pueden aplicarse respecto a los niveles admisibles de exposición al ruido.
- Después de la instalación, pruebe el sistema de sonido para asegurarse de que funcione correctamente.
- Después de completar estas pruebas, entregue una copia de este pliego de instrucciones a todo el personal operativo.
- Establezca un procedimiento para revisar, como tarea de rutina, la instalación del altavoz para verificar su integridad y su correcto funcionamiento. Todas las tareas de mantenimiento deben ser realizadas por un electricista capacitado conforme a las directrices del Código NEC y los códigos locales.

Si no se siguen todas las precauciones e instrucciones de seguridad pueden ocurrir daños materiales, graves lesiones o la muerte para usted u otras personas.

A. Descripción

El Excitador Modelo AM100D de Federal Signal es un excitador de compresión de 100 W para trabajos pesados que puede usarse en instalaciones de sistemas de megafonía pública de gran potencia.

El exterior de este dispositivo tiene un acabado con duradera pintura a prueba de intemperie y todas las piezas metálicas han sido tropicalizadas para lograr una mayor resistencia a condiciones de gran humedad y al ataque de los hongos.

Estos excitadores son ideales tanto para aplicaciones bajo techo como al aire libre y son muy apropiados para cualquier instalación que requiera un funcionamiento resistente de gran potencia.

B. Especificaciones del Modelo AM100D

Consumo de energía eléctrica:	100 W
Impedancia:	
Capacidad nominal	8 ohmios
Nivel de presión del sonido a 1 metro:	130 dBa*
Nivel de presión del sonido a 10 pies (3 metros):	120 dBa*
Respuesta de frecuencia:	300-3000 Hz
Construcción:	Resistente caja fundida al troquel con acabado a prueba de intemperies para el uso al aire libre.
Conexión mecánica del excitador:	1-3/8 pulg. rosca 18, 1/2 pulg. de largo

* Banda rosada de ruido - Limitada de 400 a 4000 Hz usando una bocina AM100H.

Peso:	
Peso de envío	5.0 libras (2.25 kg)
Peso neto	4.3 libras (1.93 kg)
Dimensiones:	
Diámetro	4.66 pulg. (118 mm)
Altura	2.82 pulg. (71 mm)
Bocina recomendada:	AM100H

C. Desembalaje

Después de desembalar el Excitador Modelo AM100D, examínelo para detectar cualquier daño que pueda haber ocurrido durante su transporte. Si el equipo está dañado, no intente instalarlo ni ponerlo a funcionar. Presente inmediatamente una reclamación ante el transportista indicando la extensión de los daños. Revise cuidadosamente todos los sobres, etiquetas de envío y rótulos antes de retirarlos o destruirlos.

D. Instalación.

1. Coloque la arandela provista en el cuello de la bocina.
2. Enrosque el excitador en la bocina.

ADVERTENCIA

Esta unidad es pesada y debe montarse sobre una superficie rígida capaz de soportar el peso del altavoz.

3. Instale el conjunto de bocina/excitador en el lugar previsto, consultando las instrucciones que vienen con la bocina.
4. Distribuya el cableado del altavoz llevándolo al conjunto bocina/excitador.

ADVERTENCIA

No conecte los cables mientras el sistema esté recibiendo energía eléctrica.

5. Conecte el cableado del altavoz a los conductores del altavoz.

CUIDADO

Al conectar múltiples altavoces, se DEBE MANTENER la polaridad. Asegúrese de que todos los cables rojos se conecten al mismo conductor de salida de audio y que todos los cables negros se conecten al mismo conductor de salida de audio.

E. Mantenimiento

CUIDADO

Todas las tareas de mantenimiento deben ser realizadas por un electricista capacitado conforme a las directrices del Código NEC y los códigos locales.

No realice trabajos de mantenimiento en este dispositivo mientras el sistema esté recibiendo energía eléctrica.

Federal Signal reparará su equipo o le prestará asistencia técnica con cualquier problema que no pueda corregirse localmente.

Todas las unidades devueltas a Federal Signal para su mantenimiento, inspección o reparación deben venir acompañadas de una Autorización de Devolución de Materiales. (RMA, por sus siglas en inglés). Esta RMA puede obtenerse de su distribuidor local o del representante del fabricante.

En ese momento se le pedirá una breve explicación del servicio solicitado o la naturaleza del desperfecto.

Dirija toda su correspondencia y todos sus envíos a:

FEDERAL SIGNAL CORPORATION
 Electrical Products División
 Service Department
 2645 Federal Signal Drive
 University Park, IL 60466-3195

INSTRUCTIONS D'INSTALLATION ET D'ENTRETIEN POUR LE MODÈLE DE COMMANDE AMI00D

MESSAGE DE SÉCURITÉ POUR LES INSTALLATEURS, LES UTILISATEURS ET LE PERSONNEL RESPONSABLE DE L'ENTRETIEN.

Il est important de suivre toutes les instructions expédiées avec ce produit. Ce dispositif doit être installé par un électricien bien formé qui connaît le Code national de l'électricité (NEC) et qui respecte toutes les directives du NEC ainsi que les codes locaux.

Le choix de l'emplacement de montage de ce dispositif, ses contrôles et l'acheminement du câblage doivent se faire sous la direction de l'ingénieur de l'installation et l'ingénieur responsable de la sécurité. En outre, vous trouverez ci-après une liste de certaines instructions et précautions de sécurité importantes à suivre :

- Ceci n'est pas un dispositif de sécurité homologué et n'est donc pas prévu à cet effet en termes d'utilisation.
- Lisez et comprenez toutes les instructions avant d'installer ou de faire fonctionner cet équipement.
- Ne connectez pas l'appareil au système si le courant n'est pas coupé.
- Tous les haut-parleurs d'avertissement efficaces produisent des sons forts qui peuvent causer, dans certains cas, des pertes auditives permanentes. Vous devriez prendre les précautions appropriées comme par exemple le port de protection auditive.
- Tous les haut-parleurs d'avertissement efficaces produisent des sons forts qui peuvent causer, dans certains cas, des pertes auditives permanentes. L'appareil doit être installé assez loin des auditeurs que possible pour limiter leur exposition tout en conservant son efficacité. La norme de bruit 1910.95 des règlements du code fédéral de la OSHA (Code of Federal Regulations 1910.95 Noise Standard) offre des directives à utiliser pour les niveaux d'exposition au bruit admissible.
- Après l'installation, testez le système sonore pour vous assurer de son bon fonctionnement.
- Après le test, fournissez une copie de ce feuillet d'instructions à tout le personnel d'opération.
- Établissez une procédure de vérification de routine de l'installation du haut-parleur pour vérifier son intégrité et son bon fonctionnement. Tout entretien doit être effectué par un électricien formé conformément aux codes locaux et aux directives du code national de l'électricité.

Le non-respect de toutes les précautions de sécurité et instructions peut mener à des dommages à la propriété, des blessures graves ou la mort pour vous ou pour d'autres.

A. Description.

Le modèle AMI00D de Federal Signal est une commande à compression à usage industriel de 100 watts, que l'on peut utiliser dans des installations de diffusion publique à haute puissance.

L'extérieur est fini d'une peinture durable à l'épreuve des intempéries et toutes les pièces métalliques ont été climatisées pour les tropiques afin d'assurer une résistance à un haut degré d'humidité et aux champignons.

Modèle idéal pour les applications à l'intérieur et à l'extérieur, ces commandes conviennent particulièrement pour toute installation exigeant une performance robuste et à haute puissance.

B. Spécifications du modèle AMI00D.

Puissance admissible :	100 watts
Impédance :	
Nominale	8 ohms
Niveau de pression acoustique @ 1 mètre :	130 dBa*
Niveau de pression acoustique @ 10 pi :	120 dBa*
Réponse en fréquence :	300 - 3 000 Hz
Construction :	Boîtier robuste matricé au fini à l'épreuve des intempéries pour une utilisation à l'extérieur.
Connexion mécanique de la commande :	1 3/8 po (3,49 cm) -18 pas, 1/2 po (1,27 cm) de longueur

* Bruit rose à largeur de bande limitée de 400 à 4 000 Hz en utilisant l'avertisseur sonore AMI00H.

Poids :	
Expédition	5,0 lb (2,268 kg).
Net	4,3 lb (2,68 kg)
Dimensions :	
Diamètre	4,66 po (11,83 cm)
Hauteur	2,82 po (7,26 cm)
Avertisseur sonore recommandé :	AMI00H

C. Déballage.

Après avoir déballé le modèle AM100D, examinez-le pour tout signe de dommages qui auraient pu apparaître en transit. Si l'appareil est endommagé, n'essayez pas de l'installer ou de le faire fonctionner. Déposez immédiatement une réclamation auprès du transporteur indiquant la portée des dommages. Vérifiez attentivement toutes les enveloppes, les étiquettes d'expédition et les étiquettes avant de les retirer ou de les détruire.

D. Installation.

1. Positionnez la rondelle fournie dans la gorge de l'avertisseur sonore.
2. Vissez la commande dans l'avertisseur sonore.

AVERTISSEMENT

Cette unité est lourde et devrait être montée sur une surface rigide capable de supporter le poids du haut-parleur.

3. Installez l'assemblage de l'avertisseur sonore/commande à l'endroit choisi en vous reportant aux instructions fournies avec l'avertisseur.
4. Acheminez les fils du haut-parleur jusqu'à l'assemblage de l'avertisseur sonore/commande.

AVERTISSEMENT

Ne connectez pas les fils lorsque l'appareil est sous tension.

5. Connectez les fils du haut-parleur aux fils de sortie du haut-parleur.

MISE EN GARDE

Lorsqu'on connecte des haut-parleurs multiples, on DOIT respecter la polarité. Assurez-vous que tous les fils rouges sont connectés au même fil de sortie audio, et que tous les fils noirs sont connectés au même fil de sortie audio.

E. Réparation.

MISE EN GARDE

Tout entretien doit être effectué par un électricien formé conformément aux codes locaux et aux directives du code national de l'électricité.

Ne faites pas l'entretien de cet appareil si le circuit est sous tension.

Federal Signal réparera votre équipement ou fournira une aide technique pour tout problème qui ne peut être solutionné localement.

Tous les appareils retournés à Federal Signal pour réparation, inspection ou entretien doivent être accompagnés d'une autorisation de retour du matériel. Cette autorisation s'obtient du distributeur local ou du représentant du fabricant.

Il faudrait aussi joindre une brève explication du service demandé ou de la nature de la défaillance.

Adressez toutes les communications et les expéditions à :

FEDERAL SIGNAL CORPORATION

Electrical Products Division
 Service Department
 2645 Federal Signal Drive
 University Park, IL 60466-3195

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MODEL AM100H

**INSTALLATION AND SERVICE INSTRUCTIONS FOR
MODEL AM100H HORN**

MODELO AM100H

**INSTRUCCIONES DE INSTALACION Y SERVICIO PARA BOCINA
MODELO AM100H**

MODELE AM100H

**INSTRUCTIONS D'INSTALLATION ET DE MAINTENANCE POUR
L'AVERTISSEUR SONORE MODELE AM100H**

Address all communications and shipments to:
Dirija todos la correspondencia y envíos a:
Adressez toutes les communiations et expéditions à:



FEDERAL SIGNAL CORPORATION
Electrical Products Division
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTALLATION AND SERVICE INSTRUCTIONS FOR MODEL AM100H HORN

SAFETY MESSAGE TO INSTALLERS, USERS AND MAINTENANCE PERSONNEL

It is important to follow all instructions shipped with this product. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electrical Code and will follow NEC Guidelines as well as local codes.

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the facilities engineer and the safety engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- This is not a Listed safety device and is not intended to be used as such.
- Read and understand all instructions before installing or operating this equipment.
- Do not install this device while the system power is on.
- All effective warning speakers produce loud sounds which may cause in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- After testing is complete, provide a copy of this instruction sheet to all operating personnel.
- Establish a procedure to routinely check the speaker installation for integrity and proper operation. Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

A. Description.

The Federal Signal Model AM100H is a wide-angle horn for use in public address, paging, and voice warning systems.

The AM100H is constructed from a Moplen polymer with a self-colored grey finish. A positive-lock "U" mounting bracket is provided for maximum mounting flexibility and ease of installation.

B. Model AM100H Specifications.

Cut-off Frequency:	300Hz
Construction:	The horn is molded in grey Moplen
Mechanical Connection of Driver: date	Threaded metal throat insert to accommodate a screw-in driver with a throat opening of 0.7-inch to 1.0-inch diameter and a standard 1-3/8" thread
Weight:	
Shipping	6 lbs.
Net	4 lbs. 10 oz.
Housing Dimensions:	
Width	19.56"
Height	11.50"
Depth	22.31"
Recommended Driver:	AM100D

C. Unpacking.

After unpacking the Model AM100H, examine it for damage that may have occurred in transit. If the equipment has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier stating the extent of the damage. Carefully check all envelopes, shipping labels and tags before removing or destroying them.

D. Mounting.

CAUTION

The selection of the mounting location for the device, its controls and the routing of the wiring is to be accomplished under the direction of the facilities and the safety engineer.

The speaker is intended to be mounted on any relatively flat and rigid surface. Hardware for mounting the speaker to the surface is left up to the installer.

WARNING

This unit is heavy and should be mounted on a rigid surface capable of supporting the weight of the speaker.

NOTE

Position the supplied washer in the throat of the horn before installing the driver

E. Electrical Connections.

Refer to the instructions packed with the compression driver (AM100D recommended).

F. Service.

CAUTION

Any maintenance must be performed by a trained electrician in accordance with NEC guidelines and local codes.

Do not perform maintenance on this device while the system power is on.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization. This R.M.A can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION

Electrical Products Division

Service Department

2645 Federal Signal Drive

University Park, IL 60466-3195

INSTRUCCIONES DE INSTALACION Y SERVICIO PARA BOCINA MODELO AM100H

MENSAJE SOBRE SEGURIDAD PARA INSTALADORES, USUARIOS Y PERSONAL DE MANTENIMIENTO

Es importante seguir todas las instrucciones enviadas con los productos. Este dispositivo ha de ser instalado por un electricista capacitado que conozca plenamente las Normas para Instalaciones Eléctricas de los EE.UU. y siga las Directrices de las Normas para Instalaciones Eléctricas de los EE.UU. como así también las normas locales.

La selección del lugar de montaje para el dispositivo, sus mandos y el recorrido de los cables han de ser realizados bajo la dirección del Ingeniero de Servicios y el Ingeniero de Seguridad. Además, a continuación se enumeran otras instrucciones importantes de seguridad y precauciones que debería tomar:

- Éste no es un dispositivo enumerado de seguridad y no está diseñado para su uso como tal.
- Lea y entienda todas las instrucciones antes de instalar o accionar este equipo.
- No instale este dispositivo mientras el sistema esté recibiendo energía eléctrica.
- Todos los altavoces de aviso efectivos producen sonidos fuertes que, en ciertas situaciones, pueden causar la pérdida permanente de la audición. Debería tomar precauciones apropiadas tales como llevar protección auditiva.
- Todos los altavoces de aviso efectivos producen sonidos fuertes que, en ciertas situaciones, pueden causar la pérdida permanente de la audición. El dispositivo debería ser instalado lo suficientemente alejado de posibles oyentes para limitar su exposición mientras se mantiene todavía su efectividad. La Norma de Ruido 1910.95 del Código OSHA de Reglamentaciones Federales provee directrices que pueden ser usadas con relación a niveles permisibles de exposición a los ruidos.
- Después de terminar la comprobación, suministre una copia de esta hoja de instrucciones a todo el personal operativo.
- Establezca un procedimiento para verificar rutinariamente la integridad y el funcionamiento correcto del altavoz. Todo mantenimiento debe ser realizado por un electricista capacitado en conformidad con las directrices de las Normas para Instalaciones Eléctricas de los EE.UU. y las normas locales.

Si no se siguen todas las precauciones e instrucciones de seguridad, pueden causarse daños a la propiedad, heridas graves o la muerte suya o de terceros.

A. Descripción.

El Modelo AM100H de Federal Signal es una bocina de gran angular para uso en sistemas de altavoces, búsqueda de personas y aviso por voz.

El AM100H está construido con un polímero Moplen con un acabado gris autocolorado. Se provee un soporte de montaje de trabado eficaz en "U" para máxima flexibilidad de montaje y fácil instalación.

B. Modelo AM100H Especificaciones.

Frecuencia de cierre:	300Hz
Construcción:	La bocina está moldeada en Moplen gris
Conexión mecánica del excitador:	Inserción de boca metálica roscada para alojar un excitador atornillable con una abertura de boca de 0,7 pulgadas a 1,0 pulgada de diámetro y una rosca estándar de 1-3/8" pulgadas
Peso:	
Envío	6 libras (2,7 Kg)
Neto	4 libras 10 onzas (2,227 Kg)
Dimensiones del alojamiento:	
Ancho	19,56" (49,68 cm)
Alto	11,50" (29,21 cm)
Profundidad	22,31" (56,67 cm)
Excitador recomendado:	AM100D

C. Desembalaje.

Después de desembalar Modelo AM100H, examínelo cuidadosamente por daños posibles que pueden haber ocurrido en tránsito. Si el equipo ha sido dañado, presente una reclamación inmediatamente con el transportista indicando el grado de daño. Verifique cuidadosamente todas las etiquetas y rótulos de envío por instrucciones especiales antes de quitarlos o destruirlos.

D. Montaje.

CUIDADO

La selección del lugar de montaje para el dispositivo, sus mandos y el recorrido de los cables ha de ser lograda bajo la dirección de los ingenieros de servicios y seguridad.

El altavoz está diseñado para ser montado sobre cualquier superficie relativamente plana y rígida. Los accesorios para montar el altavoz en la superficie corren por cuenta del instalador.

AVISO

Esta unidad es pesada y debería ser montada sobre una superficie rígida capaz de sustentar el peso del altavoz.

NOTA

Coloque la arandela provista en el cuello de la bocina antes de instalar el excitador.

E. Conexiones Eléctricas.

Consulte las instrucciones empacadas con el excitador de compresión (se recomienda AM100D).

F. Servicio.

CUIDADO

Todas las tareas de mantenimiento deben ser realizadas por un electricista capacitado conforme a las directrices del Código NEC y los códigos locales.

No realice trabajos de mantenimiento en este dispositivo mientras el sistema esté recibiendo energía eléctrica.

Federal Signal reparará su equipo o brindará asesoramiento técnico para cualquier problema que no pueda ser manejado localmente.

Toda unidad regresada a Federal Signal para servicio, inspección o reparación debe ir acompañada de una Autorización de Regreso de Material (R.M.A.). Esta R.M.A. puede ser obtenida del Distribuidor o del Representante local del Fabricante.

En dicho momento, debería proveerse una breve explicación del servicio solicitado, o de la naturaleza del desperfecto.

Todas las comunicaciones y envíos deberían dirigirse a:

FEDERAL SIGNAL CORPORATION

Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTRUCTIONS D'INSTALLATION ET DE MAINTENANCE POUR L'AVERTISSEUR SONORE MODELE AM100H

MESSAGE DE SECURITE DESTINE AUX INSTALLATEURS, AUX UTILISATEURS ET AU PERSONNEL DE MAINTENANCE

Il est important de suivre toutes les instructions expédiées avec les produits. Cet appareil doit être installé par un électricien qualifié et qui est familier avec le Code Electrique National et qui suit aussi bien les Directives NEC (Code électrique national) que les codes locaux.

La sélection de l'emplacement de support pour cet appareil, ses commandes et le chemin de câblage doit être effectuée sous la responsabilité de l'ingénieur des installations et l'ingénieur de la sécurité. En complément, quelques autres consignes et mesures de sécurité importantes que vous devriez suivre sont listées ci-dessous:

- Ce n'est pas un appareil listé de sécurité et ne devra pas être utilisé comme tel.
- Lire et comprendre toutes les instructions avant d'installer et de faire fonctionner cet équipement.
- N'installez pas cet appareil lorsque le système est sous tension.
- Tous les haut-parleurs efficaces produisent des sons importants qui peuvent causer, dans certaines situations, une perte permanente de l'ouïe. Vous devez prendre les précautions nécessaires, comme par exemple, porter des protections appropriées.
- Tous les haut-parleurs efficaces produisent des sons importants qui peuvent causer, dans certaines situations, une perte permanente de l'ouïe. Cet appareil doit être installé assez loin de personnes auditrices éventuelles afin de limiter leurs expositions tout en conservant l'efficacité du haut-parleur. Le Code de Réglementations Fédérales OSHA 1910.95 concernant la Norme de Bruit fournit des directives qui peuvent être utilisées en ce qui concerne les niveaux permis d'exposition au bruit.
- Une fois que le test est fini, donner une copie de cette fiche d'instruction à tout le personnel.
- Etablir une procédure afin de vérifier de façon routinière l'installation correcte et le bon fonctionnement du haut-parleur. Toute maintenance devra être exécutée par un électricien qualifié en conformité avec les directives NEC et les codes locaux.

Le non-respect de toutes les instructions et les consignes de sécurité peut conduire à des dégâts sur les équipements, de sérieuses blessures ou votre mort ou celle des autres.

A. Description.

Le modèle Federal Signal AM100H est un avertisseur sonore à grand angle utilisé pour les communications au public, l'appel et les systèmes d'avertissement sonores.

L'AM100H est fabriqué à partir de polymère Mopeln avec un fini de couleur grise. Un support de montage en forme de U à verrouillage positif est livré avec l'appareil pour assurer une flexibilité de montage et une installation facile.

B. Specifications du Modele AM100H.

Fréquence de coupure:	300Hz
Construction:	L'avertisseur sonore est moulé en Moplen gris
Connexion mécanique de l'entraînement:	Un insert de gorge en métal fileté pour pouvoir être utilisé un entraînement vissé avec une ouverture de gorge de 0,7 pouce à 1 pouce de diamètre avec un filetage standard de 1-3/8"
Poids:	
A l'expédition	6 livres
Net	4 livres 10 onces
Dimension du boîtier:	
Largeur:	19,56"
Hauteur:	11,50"
Profondeur:	22,31"
Entraîneur recommandé:	AM100D

C. Deballage.

Après avoir déballé le Modèle AM100H , l'examiner avec minutie afin de voir s'il a été endommagée pendant le transport. Si l'équipement a subi des dégâts, remplir une demande de réclamation immédiatement avec le transporteur rapportant l'étendue des dégâts. Vérifier avec précaution toutes les enveloppes, les étiquettes et les bandes de marquage d'expédition avant de les ôter ou de les jeter.

D. Montage.

PRECAUTION

La sélection de l'emplacement de support pour cet appareil, ses commandes et le chemin de câblage doit être effectuée sous la responsabilité de l'ingénieur des installations et l'ingénieur de la sécurité.

Le haut-parleur devra être monté sur une surface relativement plate et rigide. Le choix du matériel pour le montage du haut-parleur est laissé à l'installateur.

AVERTISSEMENT

Cette unité est lourde et devra être montée sur une surface rigide capable de supporter le poids du haut-parleur.

REMARQUE

Positionnez la rondelle fournie dans la gorge de l'avertisseur sonore avant d'installer la commande.

E. Connexion Electriques.

Se reporter aux instructions qui sont fournies avec entraînement de compression (AM100D est recommandée).

F. Service.

MISE EN GARDE

Tout entretien doit être effectué par un électricien formé conformément aux codes locaux et aux directives du code national de l'électricité.

Ne faites pas l'entretien de cet appareil si le circuit est sous tension.

L'usine Federal assurera le service de votre équipement ou fournira une assistance technique sur tous les problèmes qui ne peuvent pas être résolus localement.

Toutes les unités renvoyées à Federal Signal pour un service, une inspection ou une réparation doivent être accompagnées par une Notification de retour de matériel (R.M.A.). Cette R.M.A. peut être obtenue auprès du distributeur local ou du représentant du fabricant.

Une telle notification devra indiquer clairement une courte description du service requis et donner toutes les informations importantes concernant la nature du mauvais fonctionnement.

Adresser toutes les communications et les expéditions à:

FEDERAL SIGNAL CORPORATION

Electrical Products Division

Service Department

2645 Federal Signal Drive

University Park, IL 60466-3195

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MODEL A15-EL
ELECTRONIC MEGAPHONE
INSTRUCTION MANUAL

Address all communications and shipments to:



FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

**MODEL A15-EL
ELECTRONIC MEGAPHONE
INSTRUCTION MANUAL**

A. GENERAL.

- Caution – Amplified sound or howling may cause damage to a person’s ears. Do not use this megaphone at or near a person’s ears.
- When the megaphone is not in use for a long period of time, remove the batteries and store separately.
- Do not place your megaphone in strong sunlight or near a heater for an extended period of time.
- When cleaning the megaphone body, only use a neutral detergent. Never use thinner or benzene.

B. UNPACKING.

After unpacking the A15-EL Megaphone, examine it carefully for possible damage that may have occurred in transit. If it has been damaged, immediately file a claim with the carrier stating the extent of damage. Carefully check all shipping labels and tags for special instructions before removing or destroying them.

C. SPECIFICATIONS.

Power Output	Rated: 10W Maximum: 16W
Power Consumption	Below 16W (at rated output)
Effective Distance	Approx. 825 ft. (250m)
Power Source	SUM-2 (size C or R-14) dry cell (Alkaline) batteries
Power Duration	Approximately 6 hours
Microphone	Anti-howling, dynamic type (combined to main body)
Horn Diameter	7.88 in (200mm)
Total Length	13.88 in (340mm)
Weight	Approx. 2.86 lb ; 1.3 kg (without batteries)

D. BATTERY INSERTION.

1. Open the back cover by releasing the cover latch (see figure 1).
2. Place six (6) C-size Alkaline batteries into the unit according to the polarity indication shown on the inside wall (see figure 1).

E. OPERATION.

WARNING

Your hearing and the hearing of others, close to the electronic megaphone, could be damaged by loud sounds. This can occur from short exposures to very loud sounds, or from longer exposures to moderately loud sounds. For hearing conservation guidance, refer to federal, state, or local recommendations. OSHA Standard 1910.95 offers guidance on “Permissible Noise Exposure.”

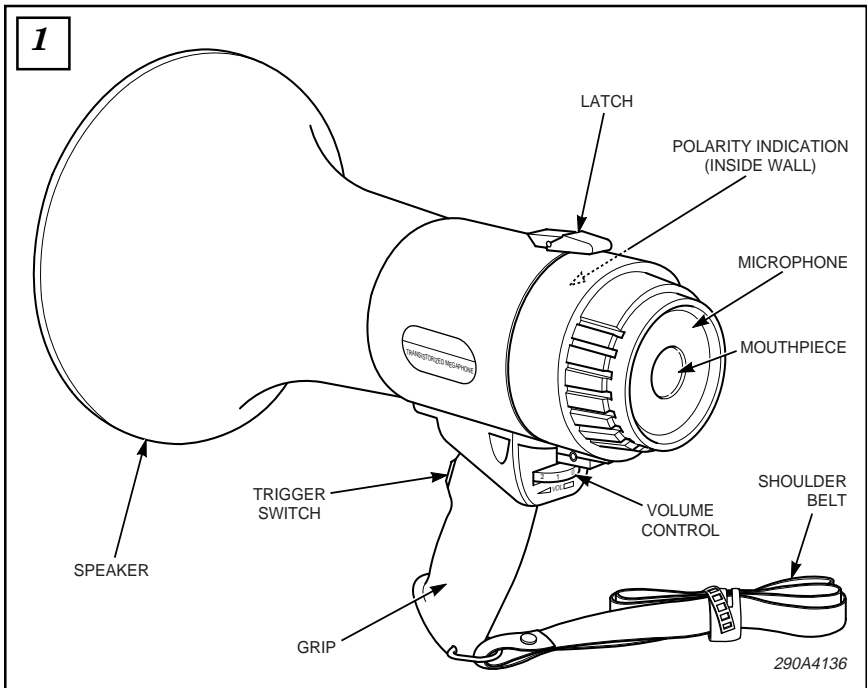
1. To activate the megaphone press the trigger switch on the grip.
2. When using the megaphone, place your lips as close as possible to the mouth piece. Adjust the volume control to a range where there is no howling feedback when in use (see figure 1).

F. SERVICE.

The Federal factory will service your megaphone or provide technical assistance with any problem that cannot be handled locally.

Any units returned to Federal Signal for service, inspection, or repair must be accompanied by a Return Material Authorization. This RMA can be obtained from the local Distributor or Manufacturer's Representative. At this time a brief explanation of the service requested, or the nature of the malfunction should be provided. Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL. 60466-3195



AUDIOMASTER® EXPLOSION-PROOF-SPEAKERS

MODEL AM15XD1 INSTALLATION AND SERVICE INSTRUCTIONS



Address all communications and shipments to:



FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

INSTALLATION AND SERVICE INSTRUCTIONS FOR MODEL AM15XD1

WARNING

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

SAFETY MESSAGE TO INSTALLERS

Peoples lives depend on your safe installation of our products. It is important to follow all instructions shipped with the products. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electric Code and will follow the NEC guidelines as well as local codes.

The selection of the mounting location for the device, its controls and routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this equipment.
- This unit must be installed by a qualified electrician in accordance with NFPA72, and National and local Electrical and Fire Codes, under the direction of the authority having jurisdiction.
- Do not connect this unit to the system when power is on.
- All effective warning speakers produce loud sounds which may cause, in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- After installation, test the sound system to ensure proper operation.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- Show these instructions to your Safety Engineer and then file them in a safe place and refer to them when maintaining and/or reinstalling the unit.
- After installation and completion of initial system test, a program for periodic testing of this device must be established. Refer to the authority having jurisdiction for this information.
- Consult the authority having jurisdiction in your area regarding the proper use and installation of this product.

A. GENERAL.

The AudioMaster Model AM15XD1 is an indoor/outdoor, 15 watt, hazardous location loudspeaker for use with general signaling systems such as Federal Signal's FS.COMMSTM or SelectFone® systems. This model is suitable for use in NEC Class I, Groups B, C, & D; hazardous locations; and in areas with high ambient noise levels. It is designed to reproduce electronically generated warning tones, which command rapid recognition, and full range voice communication. An adjustable mounting bracket is provided to allow positioning for desired sound coverage.

B. SPECIFICATIONS.

Operating Voltage	12.8 Vrms Max
Impedence	11 Ohm
Power Input	15 W Max
Weight (approx.)	15 lb. (6.8 kg)
Size	14.75" (375mm) long, 14.75" (375mm) high, 8.875" (225mm) wide.
Construction	Aluminum enclosure and adjustable steel mounting bracket painted with grey enamel.

Approval Agency Listings:

Underwriters Laboratories Inc. Guides UGKZ and UGKZ7

C. INSTALLATION.

1. Unpacking.

After unpacking the speaker, examine it carefully for possible damage that may have occurred in transit. If equipment has been damaged, immediately file a claim with the carrier stating the extent of the damage. Carefully check all shipping labels and tags for special instructions before removing or destroying them.

2. Mounting Arrangements.

The speaker can be mounted on any relatively flat surface. Conduit connection can be made to the 1/2" threaded opening at bottom of the housing (see figure 1).

WARNING

Property damage, serious injury, or death could occur if an accumulation of water, snow, dust, etc. resides in the speaker projector, severely reducing or preventing operation of this device. Mount the unit so speaker projector is pointed horizontally or slightly downward.

- Remove the two 1/2-13 hex head bolts, flat washers and lockwashers that secure mounting bracket to unit.
- Select mounting location.

WARNING

Property damage, serious injury, or death could occur if any objects are in front of speaker, severely reducing optimum sound distribution. For maximum effectiveness, ensure that the front of the speaker is clear of obstructions.

- Using the mounting bracket as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

CAUTION

Before drilling holes in any surface, be sure both sides of surface are clear of anything that could be damaged.

- Drill holes at the previously scribed drill position marks to accommodate 1/2" diameter screws.

- e. Secure bracket to mounting surface with 1/2" diameter screws appropriate for the type of mounting surface material.
- f. Remove eight 5/16-18 x 1-3/4" hex head bolts, lockwashers and hex nuts that secure cover to housing and carefully lift off cover.

WARNING

Property damage, serious injury, or death could occur if the machined sealing surfaces are damaged on this product. To maintain the effectiveness of the explosion-proof enclosure, be careful to avoid damaging the machined sealing surfaces of cover and housing.

- g. Reattach unit to its mounting bracket with two 1/2-13 hex head bolts, flat washers and lockwashers previously removed. Position speaker so as to obtain desired sound coverage then tighten these bolts securely.
 - h. Before reinstalling the housing cover, read paragraph d in section 3, Electrical Connections, and make the necessary connections.
3. Electrical Connections.

DANGER

To avoid electrical shock, do not connect wires when circuits are energized.

National Electrical Code, as well as local codes, must be followed during installation of these models. All electrical wiring must be routed through conduit and fittings approved for explosion-proof installations. The use of metal conduit and fittings is required to provide grounding of the enclosure.

WARNING

Property damage, serious injury, or death could occur if suitable barriers are not provided for explosive gases and other atmospheres. To reduce the possibility of explosion when this unit is used in Class I, Group B atmospheres, the conduit MUST have a sealing fitting within 18-inches of the enclosure. Be sure to refer to the National Electrical Code or the authorities having jurisdiction in your area.

- a. Connect the audio common leads (-) to the speaker's common terminal (marked (-)) and audio positive (+) leads to the (+) SIG terminal (see figures 2 and 3).

WARNING

An uninsulated section of a single conductor must NOT be looped around a terminal and used as two separate connections. NFPA 72 requires that the wire is severed to provide electrical supervision of the connection.

- b. Carefully reinstall housing cover using eight 5/16-18 x 1-3/4" hex head bolts, lockwashers and hex nuts that were previously removed. Verify that all housing and mounting bolts have been securely tightened.

WARNING

Property damage, serious injury, or death could occur if the housing is not closed properly. To reduce possibility of explosion, housing cover must be kept tight (all eight bolts fully tightened) while circuits are energized.

D. TESTING/OPERATING.

WARNING

Under certain conditions these devices are capable of producing sounds loud enough to cause hearing damage. Adequate hearing protection should be worn if standing within close proximity to device while testing. Recommendations in the OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.

1. After installation is complete, be sure to test the system to verify that each speaker operates satisfactorily. Reinstall the housing cover.

WARNING

Property damage, serious injury, or death could occur if the housing is not closed properly. To reduce possibility of explosion, housing cover must be kept tight (all eight bolts fully tightened) while circuits are energized.

2. After completion of initial system test, establish a program for periodic testing of this device. Refer to NFPA72G, local Fire Codes and the authority having jurisdiction for this information.
3. Provide a copy of these instructions for the Safety Engineer, system operator(s) and maintenance personnel.

SAFETY MESSAGE TO OPERATORS

Even if your warning system is operating properly, it may not be completely effective. People may not hear or heed your warning signal. You must recognize this fact and ensure that your warning signal achieves its intended effect through proper test/training sequences within your specific application(s).

E. MAINTENANCE.

SAFETY MESSAGE TO MAINTENANCE PERSONNEL

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

- Read and understand all instructions before performing maintenance on this unit.
- Do not perform maintenance on this unit when circuits are energized.
- Periodic checks should be made to ensure that effectiveness of this device has not been reduced because speaker has become clogged with a foreign substance or because objects have been placed in front of the speaker.
- Any maintenance to this unit **MUST** be performed by a trained electrician in accordance with NEC guidelines and local codes.
- Never alter this unit in any manner. Safety in hazardous locations may be jeopardized if additional openings or alterations are made to this device.
- The nameplates, which contain cautionary or other information of importance to maintenance personnel, should not be obscured if exterior of device is painted.

WARNING

Effectiveness of explosion-proof enclosure must be maintained. Use caution to avoid damaging machined surfaces.

1. Periodically check this device to verify that there are no foreign substances in, or in front of, the speaker which will reduce its effectiveness.
2. Testing should be periodically performed. Refer to NFPA 72G, local Fire Codes and the authority having jurisdiction for information.
3. In the event a volume adjustment or other repair is required, be sure to refer to the Safety Message For Maintenance Personnel before proceeding.

F. Service.

WARNING

Unauthorized repair/servicing of the unit may result in degradation of performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair/retrofit of parts.

Federal Signal will service your equipment or provide technical assistance with any problems that cannot be handled locally.

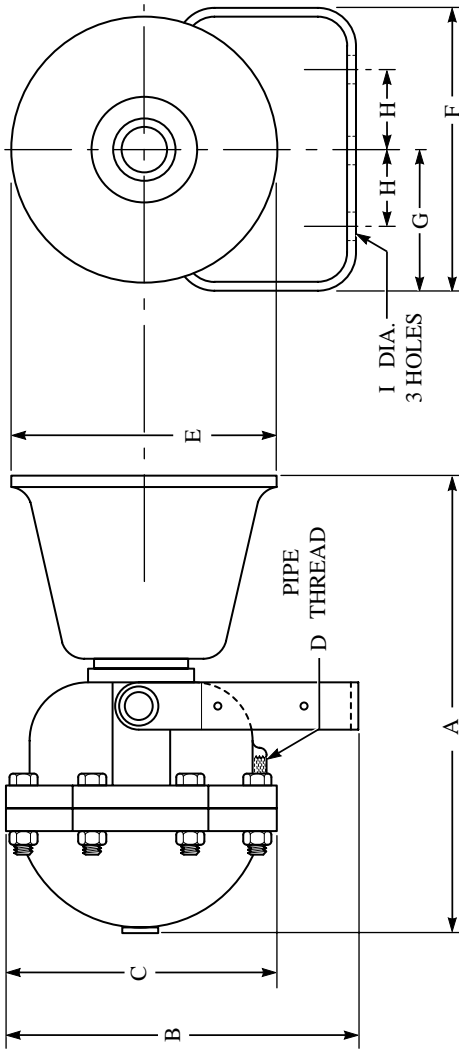
Any units returned to Federal Signal for service, inspection, or repair, must be accompanied by a Return Material Authorization. This R.M.A. can be obtained from the local Distributor or Manufacturer's Representative.

At this time a brief explanation of the service requested or the nature of the malfunction, should be given.

Address all communications and shipments to:

FEDERAL SIGNAL CORPORATION
Electrical Products Division
Service Department
2645 Federal Signal Drive
University Park, IL 60466-3195

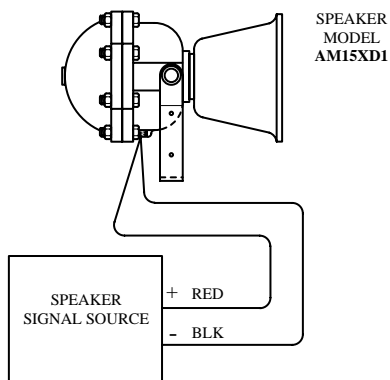
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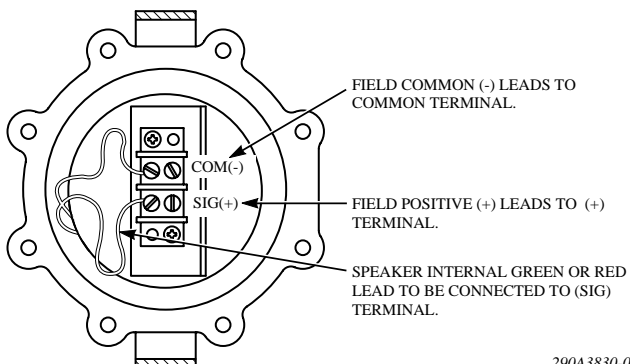
A	B	C	D	E	F	G	H	I
14.75 in.	14.75 in.	8.312 in.	0.500 in.	8.375 in.	8.875 in.	4.500 in.	2.500 in.	0.531 in.
37.5 cm.	37.5 cm.	21.1 cm.	12 mm.	21.3 cm.	22.5 cm.	11.4 cm.	6.35 cm.	13 mm.

290A3830-01

2



3



INSTALLATION INSTRUCTIONS FOR MODEL AM30XD1 AUDIOMASTER® EXPLOSION-PROOF SPEAKER

WARNING

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

SAFETY MESSAGE TO INSTALLERS

Peoples lives depend on your safe installation of our products. It is important to follow all instructions shipped with the products. This device is to be installed by a trained electrician who is thoroughly familiar with the National Electric Code and will follow the NEC guidelines as well as local codes.

The selection of the mounting location for the device, its controls and routing of the wiring is to be accomplished under the direction of the Facilities Engineer and the Safety Engineer. In addition, listed below are some other important safety instructions and precautions you should follow:

- Read and understand all instructions before installing or operating this equipment.
- This unit must be installed by a qualified electrician in accordance with National and local Electrical Codes, under the direction of the authority having jurisdiction.
- Do not connect this unit to the system when power is on.
- All effective warning speakers produce loud sounds which may cause, in certain situations, permanent hearing loss. You should take appropriate precautions such as wearing hearing protection.
- After installation, test the sound system to ensure proper operation.
- All effective warning speakers produce loud sounds, which may cause, in certain situations, permanent hearing loss. The device should be installed far enough away from potential listeners to limit their exposure while still maintaining its effectiveness. The OSHA Code of Federal Regulations 1910.95 Noise Standard provides guidelines which may be used regarding permissible noise exposure levels.
- Show these instructions to your Safety Engineer and then file them in a safe place and refer to them when maintaining and/or reinstalling the unit.
- After installation and completion of initial system test, a program for periodic testing of this device must be established. Refer to the authority having jurisdiction for this information.
- Consult the authority having jurisdiction in your area regarding the proper use and installation of this product.

A. General.

The AudioMaster Model AM30XD1 is an indoor/outdoor hazardous location loudspeaker for use with general utility signaling systems such as Federal Signal's FS.COMMS™ and SelectFone® systems. This model is suitable for use in NEC Class I, Groups B, C, & D; hazardous locations; and in areas with high ambient noise levels. It is designed to reproduce electronically generated warning tones, which command rapid recognition, and full range voice communication. An adjustable mounting bracket is provided to allow positioning for desired sound coverage.

B. Specifications.

Operating Voltage	18.2 Vrms Max
Impedence	11 Ohm
Power Input	30 W Max
Weight (approx.)	23 lb. (10.5kg)
Size	20.75" (527mm) long, 18.56" (471mm) high, 16.375" (416mm) wide.
Construction	Aluminum enclosure and adjustable steel mounting bracket painted with grey enamel.

Approval Agency Listings:

Underwriters Laboratories Inc. Guides UGKZ and UGKZ7

C. Installation.

1. Unpacking.

After unpacking the speaker, examine it carefully for possible damage that may have occurred in transit. If equipment has been damaged, immediately file a claim with the carrier stating the extent of the damage. Carefully check all shipping labels and tags for special instructions before removing or destroying them.

2. Mounting Arrangements.

The speaker can be mounted on any relatively flat surface. Conduit connection can be made to the 1/2" threaded opening at bottom of the housing (see figure 1).

WARNING

Property damage, serious injury, or death could occur if an accumulation of water, snow, dust, etc. resides in the speaker projector, severely reducing or preventing operation of this device. Mount the unit so speaker projector is pointed horizontally or slightly downward.

- a. Remove the two 1/2-13 hex head bolts, flat washers and lockwashers that secure mounting bracket to unit.
- b. Select mounting location.

WARNING

Property damage, serious injury, or death could occur if any objects are in front of speaker, severely reducing optimum sound distribution. For maximum effectiveness, ensure that the front of the speaker is clear of obstructions.

- c. Using the mounting bracket as a template, scribe drill position marks on the mounting surface. See figure 1 for mounting hole locations and dimensions.

CAUTION

Before drilling holes in any surface, be sure both sides of surface are clear of anything that could be damaged.

- d. Drill holes at the previously scribed drill position marks to accommodate 1/2" diameter screws.
- e. Secure bracket to mounting surface with 1/2" diameter screws appropriate for the type of mounting surface material.
- f. Remove eight 5/16-18 x 1-3/4" hex head bolts, lockwashers and hex nuts that secure cover to housing and carefully lift off cover.

WARNING

Property damage, serious injury, or death could occur if the machined sealing surfaces are damaged on this product. To maintain the effectiveness of the explosion-proof enclosure, be careful to avoid damaging the machined sealing surfaces of cover and housing.

- g. Reattach unit to its mounting bracket with two 1/2-13 hex head bolts, flat washers and lockwashers previously removed. Position speaker so as to obtain desired sound coverage then tighten these bolts securely.
- h. Before reinstalling the housing cover, read paragraph d in section 3, Electrical Connections, and make the necessary connections.

3. Electrical Connections.

DANGER

To avoid electrical shock, do not connect wires when circuits are energized.

National Electrical Code, as well as local codes, must be followed during installation of these models. All electrical wiring must be routed through conduit and fittings approved for explosion-proof installations. The use of metal conduit and fittings is required to provide grounding of the enclosure.

WARNING

Property damage, serious injury, or death could occur if suitable barriers are not provided for explosive gases and other atmospheres. To reduce the possibility of explosion when this unit is used in Class I, Group B atmospheres, the conduit **MUST** have a sealing fitting within 18-inches of the enclosure. Be sure to refer to the National Electrical Code or the authorities having jurisdiction in your area.

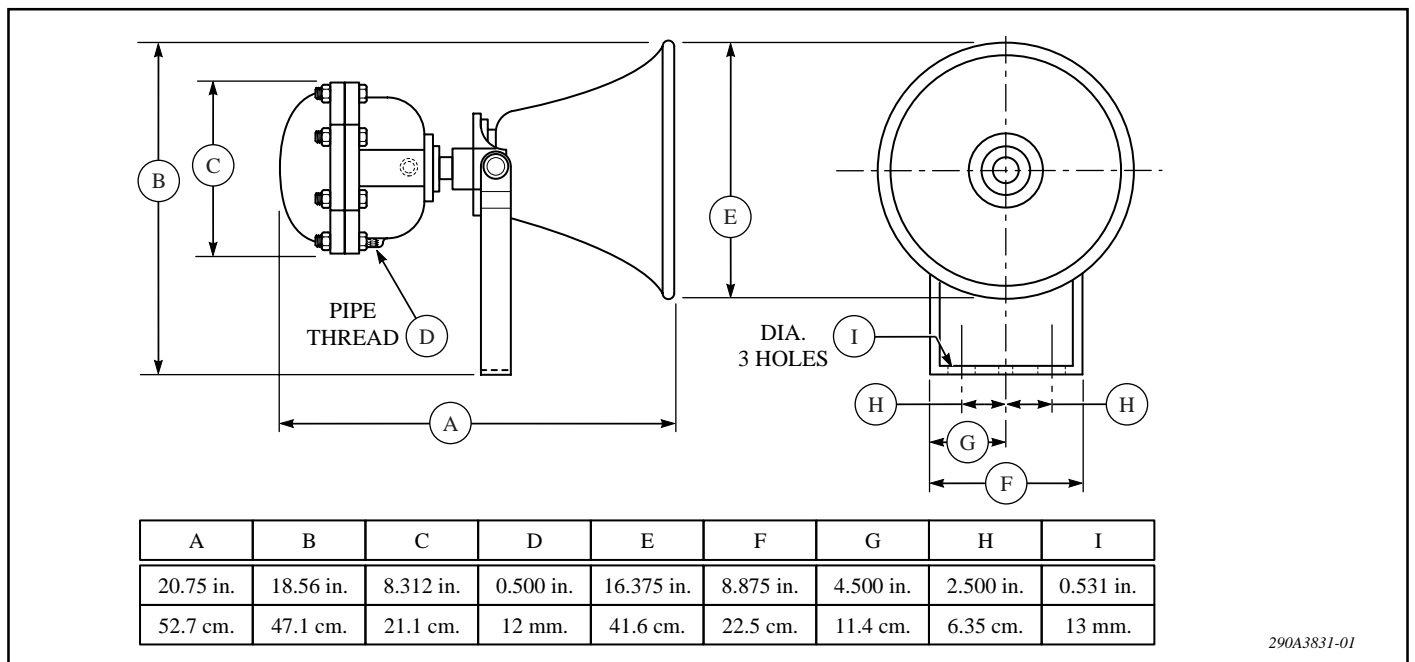


Figure 1. Model AM302X Speaker Dimensions.

- a. Connect the audio common leads (-) to the speaker's common terminal (marked COM). Refer to figures 2 and 3.
- b. Connect the audio positive (+) leads to the + (SIG) terminal.
- c. Carefully reinstall housing cover using eight 5/16-18 x 1-3/4" hex head bolts, lockwashers and hex nuts that were previously removed. Verify that all housing and mounting bolts have been securely tightened.

WARNING

Property damage, serious injury, or death could occur if the housing is not closed properly. To reduce possibility of explosion, housing cover must be kept tight (all eight bolts fully tightened) while circuits are energized.

WARNING

Audio wires should be sized properly by your licensed installation electrician for your service application. This cable requires a twisted shielded pair with an 18AWG minimum and should produce no more than 15% signal loss over the length of the cable run.

D. Testing/Operating.

WARNING

Under certain conditions these devices are capable of producing sounds loud enough to cause hearing damage. Adequate hearing protection should be worn if standing within close proximity to device while testing. Recommendations in the OSHA Sound Level Standard (29 CFR 1910) should not be exceeded.

1. After installation is complete, be sure to test the system to verify that each speaker operates satisfactorily. If it is found that the unit is too loud for its location, a lower wattage tap may be selected. Carefully remove the housing cover and move the speaker internal green or red lead to a lower wattage tap (see figure 3). Reinstall the housing cover and retest.

WARNING

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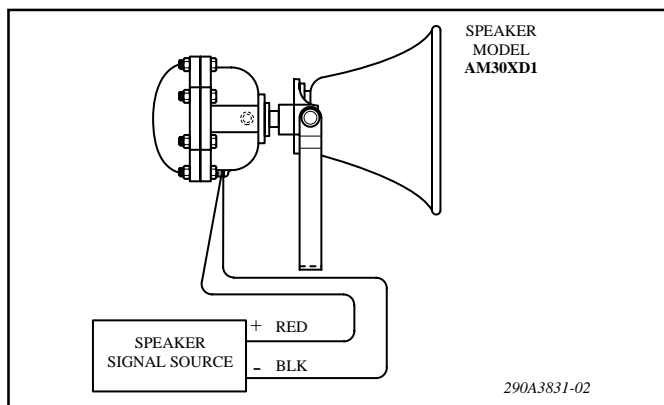


Figure 2. Typical Installation Wiring.

2. After completion of initial system test, establish a program for periodic testing of this device. Refer to the authority having jurisdiction for this information.
3. Provide a copy of these instructions for the Safety Engineer, system operator(s) and maintenance personnel.

SAFETY MESSAGE TO OPERATORS

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E. Maintenance.

SAFETY MESSAGE TO MAINTENANCE

PERSONNEL

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you or others.

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WARNING

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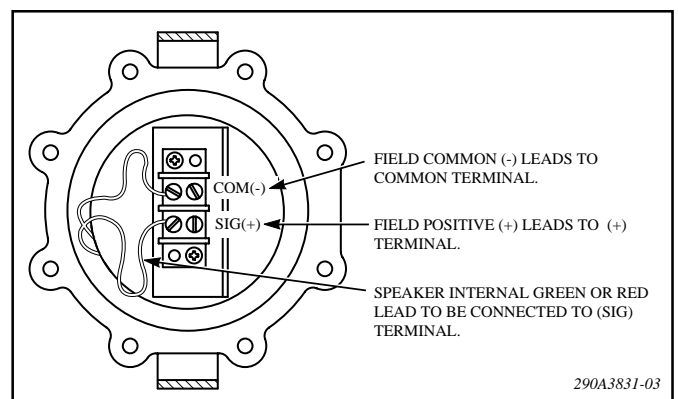


Figure 3. Internal Multi-tap Wiring Set-up.

1. Periodically check this device to verify that there are no foreign substances in, or in front of, the speaker which will reduce its effectiveness.
2. Testing should be periodically performed. Refer to the authority having jurisdiction for information.
3. In the event a volume adjustment or other repair is required, be sure to refer to the Safety Message For Maintenance Personnel before proceeding.

F. Service.

WARNING

Unauthorized repair/servicing of the unit may result in degradation of performance and/or property damage, serious injury, or death to you or others. If a malfunctioning unit is encountered, do not attempt any field repair/retrofit of parts.

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